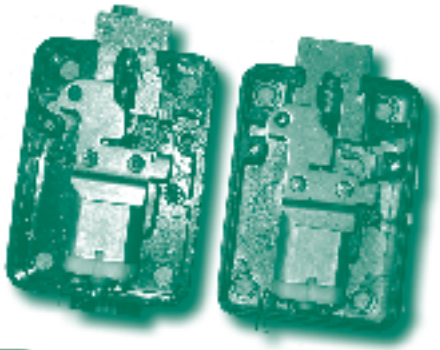
The National Locksmith's

Professional Locksmith Secrets Revealed

The Hottest Moneymaking Tips & Tricks In Locksmithing



Volume 2

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Long's Long Reach Slim-Jim

I recently opened a 2004 Chrysler Sebring that had me worried.

Even with use of a sleeve with my long reach rod, I was fearful of breaking the window. I hate wedging doors or windows to use that tool, but some cars it is a must.

After the Sebring opening, I decided to make my own thinner long reach tool and have it a Slim-Jim type rather than a rod. Well I bought one from High Tech, but it was still 1/8" thick. I did try it on the Sebring, but didn't use it.

I went up to the local hardware store and got an aluminum bar stock that was 6 feet long by 1/2" by 1/16". I cut that down to 4 feet and at one end I cut and filed out a notch so it will hook those sliding locks. I drilled two holes at that end and used a 4-1/2 foot long length of 20lb test fishing line so I can maneuver the tool to the lock buttons or slides.

Rodger Long
Illinois

Trunk Opening Trick for Older GM's

When locked out of an older GM trunk (1960, 1970, etc.), and the lock is damaged, you can gain access to the interior of the trunk through the access (actually a drain) hole on the bottom of the trunk floor. Simply push up the plate, it's attached with undercoating and two tabs.

This will allow you (if the trunk's not full of junk or luggage) to access the latching mechanism. I have unscrewed many of these latches with a ratchet and socket. I have also used a large screwdriver to flip the latch on some models.

I know these vehicles are becoming more and more scarce, but there are still quite a few of them on the road. Don't forget that you can also pop the facecap off many older model GM trunk cylinders, drill a small hole next to the sidebar, use a probe to put pressure on the sidebar and pick the lock. Of course, that means replacing the dust cover and facecap.

Brad McKenzie
Ohio

Sebring Trunk Opening Tip

The trunk release on a Sebring convertible won't operate unless the ignition is turned on. Here is a way to get in that you can keep in your bag of tricks. If the top is UP, there are just two pieces of a rug type material you have to get out of the way in order to have an open shot into the trunk.

The first piece to remove is held in place with 3 large door panel type buttons. Use a panel clip tool to pop it out. The next piece of material basically just has to be peeled back. Once you have an opening to the trunk, if you can't see the keys, you can reach in with a rod and pull the

emergency release handle to open the trunk.

Mike Moriarty
Florida

More Professional Than a Slim-Jim

Even though it's often the fastest way to open some cars, I hate to use a Slim-Jim in front of customers. Personally, I feel it looks unprofessional and gives the general public the idea that they can open anything by themselves, without the aid of a locksmith if they simply bought a Slim-Jim at the flea market.

Instead of using a Slim-Jim on vertical lock rod linkages, I put a 90° bend about 2–3 inches from one end of the rod. I then wrapped the bent tip with double-sided tape (like carpet tape).

This works very well and is as quick as a Slim-Jim. I find it will even grab the odd-angled rods that a Slim-Jim won't catch, hold or reach. I simply make sure that I have good tape on the end of my tool before I arrive at my customer's location. I find the tape will usually open between 5 to 15 cars; and the customer doesn't have a clue as to how to open it themselves.

Fred Brudnowski
Georgia

Retrieving Keys From a Lexus

Recently, I worked on a 2003 Lexus ES300. The keys were locked in the trunk. I was told by one source that it would be necessary to order keys from Lexus to open the trunk without damage, and told by a second source, I would have to drill the door lock.

I opened the vehicle with an under-the-window tool and prepared to pull panel and hot-wire the security system in the door. Before I tried to bypass the security system, I noticed that on the driver's door there was a plastic access port. Once removed it allowed access to a T-30 headed screw that I removed. I was then able to easily remove the driver's door cylinder. It reminded me of the old VW door handles, except in this case only the cylinder is removed.

Using a #3 Phillips head screwdriver, I activated the linkage/security switch on the cylinder which deactivated the alarm and allowed the trunk release to function.

I was happy to find a simple solution and the customer was thoroughly impressed.

Jeffrey Hula
Virginia

Bump Access To Astro Vans

Anyone out there in locksmith land having a problem gaining entry to those pesky Astro and Safari mini vans? These vehicles can be a bit of a challenge at the best of times. Well, there is an alternative—no tools needed—method that you can use on the later models with side door

windows with catches that allow the bottom of the window to open up a bit for ventilation.

Visually locate the two rivets on the outside bottom of the window that connect the inside catches to the window. Make a fist and with the bottom edge of your fist, give each rivet a sharp rap directly over the rivet. Make sure that you hit the rivet square on and not the window itself. When you rap it hard enough it "shocks" the inside window catch to the unlocked position, allowing you to reach inside to unlock the side door.

For obvious reasons never let your customer or others see how this is done. This method is a backup plan for you to use when other methods fail or time is short and the opportunity presents itself.

Be on the lookout for this type of window. This style is becoming more common every day. Also, for those of you who are driving a service van with this type of window catch, you may want to add a more secure type of fastener to those windows to prevent the contents of your van from "straying".

John Nocente
Ontario, Canada

Ford Expedition Face Cap Removal

This particular tip has to do with the 2002–2003 Ford Expedition. I have rekeyed two of these vehicles so far. There are four "feet" which hold the face caps on the Expedition's door locks. The feet are press fit into a small channel (possibly 1/16" wide that runs the circumference of the lock cylinder.

If you look at the lock from the rear, you will see the wall of this channel. Because of this wall, you can't get anything under the edges of the face cap to pry up on the feet. However, if you take a 1/16" drill bit and drill into this wall from the rear, you will only have to drill to a depth of 1/16" or so before you break into the channel. Place one or two of these holes on the same side and you can use an ice pick, or dental pick, to pry up on the feet.

I've found that if you drill very carefully, it is only necessary to drill one hole on one side of the cylinder. With the hole properly drilled, you can pry up one of the feet, rotate the face cap, pry up the next one and continue until all four feet have been freed from the channel. This should only take you a minute or so, and it saves the trouble of ripping or destroying the face cap.

Redd Bristow
California

BMW Entry

Many of us have opened BMWs by the turning the key in the door then lifting the handle, which allows the key to turn further thus mechanically unlocking the door (without battery power).

A BMW mechanic has reported that this will only work once and a part breaks in the handle.

The Lockmaster's flip pick for BMW's is reported to work even with a dead battery, but I found a quick way to open these through the trunk. The trunk will open with the key, and up under the rear deck there is a trunk light. With a small screwdriver pop the light out. Then apply power to the trunk light terminals with a wire or cables from my van, which will give the BMW enough power to open the front door with the key.

The red striped wire is positive and the brown striped is negative. Once opened, give the customer a jump-start using the jumper terminals under the hood (because the battery is under seat) and they're on their way.

Scott Ringenberg
Oregon

Digital Camera Car Opening Trick

In this cold weather—especially when it gets below 20-degrees—if there is a possibility of an alternate method of car opening, I try it first. Recently, I had a GM opening where the keys were in plain sight, but too far away to read.

Remembering that I had my digital camera with me (I carry if for documentation of break-ins for insurance purposes), I hit the zoom feature, maxed the magnification and took a picture of the key.

Since the digital camera allows me to look at the photograph immediately, I was able to sight-read the cuts and cut a working key on my HPC punch machine.

Larry Kanzer
Pennsylvania

Mag Lite Opening Aid

I rigged MAG Lite to aid us in night openings of autos. ***(See figure 1.)*** All you need is a MAG Lite, some plumber's strap and a clip with a magnet on it. I picked up the clip and magnet at Harbor Freight Tools for under $3.00.

Now when I do car openings, I can attach the mount and MAG Lite to the car door and my hands are free to perform the opening. ***(See figure 2.)***

Rod Springfield
Texas

Figure 1.

Figure 2.

Opening a Leer Insulated Truck Lid

I had a call to open a Leer insulated truck lid on a 2000 Ford F150—the Harley Special Edition.

The double-sided wafers pick open fairly easily. But once open, I saw an easier way to get this lid open. I don't know if they are all this way but this is what I had.

There is a safety latch pull just to the left of the lock cylinder. It is held up by Velcro but at an angle you can work with. I took a slim Jim and used a small cut off wheel on my Dremel tool to cut a small slot in the open grooves in the end of the slim Jim. I used 2 pieces of plastic to protect the paint and slid the Slim Jim between the gate and the lid. Insert about 6–8 inches then try to snag the release, the notches will hook the wire and then pull to open the lid.

It's a little like those garage door-opening tools that hook the release rope to pull the release to open the door. The springs were real tight on the one I worked on, so you will have to pull with force.

Frank Kitchen
Indiana

Contour/Mystique/Cougar Trick

While making keys to a 1999 Cougar recently, I encountered resistance inserting my newly-impressioned door key into the ignition lock. Concluding that I was encountering yet another defective Contour/Mystique/Cougar cylinder, I got the cylinder to turn and was set to replace it.

Although I had a working key, it put up an incredible resistance to removal. After it finally yielded, I rekeyed a stock lock to replace it and found that it was as hard to install as it was to remove. Once installed it turned with a distinct drag through all positions.

Knowing that my replacement was in good working order I investigated farther. Loosening the two Torx fasteners holding the ignition switch to the rear of the lock housing I heard a distinct click and found the key now turned smoothly.

Apparently an internal failure of the switch put forward pressure on the lock, causing both difficult key insertion and less than smooth key operation. I imagine this type of failure in an inexpensive plastic switch is responsible for perhaps half of the "lock failures" in this type of car. In the future I'll be loosening the switch before resorting to more forceful measures.

On a related note, my local Ford dealerships list replacement ignitions as only being available as a full set of locks. The part numbers for replacement ignitions follow. The letter from the key code determines the letter designator at the end of the part number, or you

can use the depth of the sixth cut from the tip of the key.

A number one cut equals A. A number two cut equals B, etc. Part Number F5RZ-11582-A through F5RZ-11 582-E are the ignition cylinders for the Ford Contour, while F5RY-11582-A through F5RY-11582-E are the numbers for the Mystique/Cougar locks.

Chris Sawicki
New Mexico

1998–2003 Malibu Ignition Quick Fix

I have read the procedure from GM that tells you to remove the radio and ignition housing in order to remove the lock. This procedure is OK if you have a working key with the intent to rekey the car. If you don't have a key because the key has been cut wrong or is broken, you will have to drill the housing anyway. This is where I think we can save everyone some time.

My company has serviced several of these and I think we have a better and less time consuming procedure.

To extract the ignition, all that is needed is an ice pick style tool, cordless drill and 5/32" drill bit. In some cases you will have to remove the radio trim or the ring cover for the ignition. At this point you should see the front of the housing. Find the square recess in housing at bottom right and drill a 5/32" hole in the pot metal just above the square recess until you hit the retainer spring.

Don't be afraid of breaking the retainer spring, you want to break the spring free of the mounting stamp. It will be necessary to make the hole bigger than 5/32" to remove the retainer spring. Now use your ice pick or a pair of needle nosed pliers and pull out the retainer spring. At this time the retainer itself should fall out, if not, rap the housing lightly till it falls. In my experience the retainer will fall just in front of the gas peddle. The lock is now free to remove.

There you have it, 2-hour job in 30 minutes!

Jamey Bullard
Arizona

Focus Ignition Tip

I have a tip for the removal of an ignition switch on the Ford Focus. I have discovered that instead of drilling the face, I used a right angle drill and drilled a hole in the lock case.

I drill 1-1/16" from the face of the lock on the side-bar side of the housing. Insert a key, then with a small punch inserted into the hole, punch the side-bar. The side-bar dropped and the ignition turned.

This can also be accomplished when there is no key, with no damage to the lock, by putting pressure on the side-bar and raking the wafers like the old GM in-dash.

David Craig
California

Ford Focus Opening Tip

I have been using the High Tech car opening tools since the day they came out, and for the most part the opening methods as described, work with their tools. Every now and again the opening turns out to be more complex than it should be, and so the reason for this tip.

When opening the Ford Focus, they call for an attack on the latch mechanism, which is covered by a piece of plastic and therefore out of sight. I personally do not like to blindly fish around for my car opening sweet spots, but would rather attack something I can see which then becomes something to duplicate for future openings.

My tip is to use any of the many door spreader tools ie., Glassmaster, Air Wedge™ or Jiffy Jack to safely create a wide gap at the top of the door; and then use a long reach tool to grab the door handle and just pull. The door will pop open without any fuss.

Larry Kanzer
Pennsylvania

Ford Ignition Trick

Whenever I come across Ford Ignition where the ears (or collar) turns without a key I point out to the customer that the problem is caused by the collar coming loose and spinning around the ignition.

I also tell them that it is repairable and (for the most part) they do not need a new ignition. I make this repair with a really neat product I found called Wonderlock EM, which is made by Wonderlocking Corp of Wisconsin Rapids, Wisconsin. I bought mine at Ace Hardware.

The product was originally made to repair loose legs on tables and chairs. I found that it does a marvelous job repairing the eared collars on Ford ignitions.

First I remove the Ignition and line up the collar so I can insert a key blank to stabilize the collar. Then I turn the face of the ignition towards the floor to prevent any Wonderlock from getting in the tumblers of the ignition.

Then I carefully put a few drops of Wonderlock around the "butt" of the collar where it goes over the ignition. The Wonderlock flows easily and dries very quickly. The trick is to use the material sparingly and only where needed. It takes the Wonderlock about a minute to set up.

After that, I try the operating key in the switch to make sure the switch will turn and the ignition functions properly.

When I've satisfied myself that the ignition works as it's supposed to, I reassemble the ignition and collect my fee.

Ted Zielinski Jr.
Illinois

Ford Van Rear Door Lock Fix

Recently, I was called out to look at a job that involved Ford F250 vans. It seems someone wanted to see what was inside the vans and forgot their keys to all the trucks in the lot. So this person used something to punch in the lock on the rear door.

The Ford dealer wanted to charge $348.00 each truck to replace the plastic part that holds the license plate and works the handle.

I went to the nearest home center and in the electrical department purchased reducing washers. I filed the inside of the hole in the washer to accept the lock and inserted the lock in the door and reclipped it.

This quick fix worked great and looked good. It was also stronger than the factory install. For the six trucks it was a lot less than what Ford wanted for one. I also sold twelve American hockey pucks and hasps that day.

Mike Gallagher
Illinois

Ford Pick-up Spare Tire Key Trick

If you need to cut a Ford spare tire key and find that the key is too long to fit in your key machine, you can make a home-made key that will work as good as the original and can be cut on any key machine.

Go to any garden center and get a round plastic rod used to stake tomatoes. Cut off six inches of the rod, and then cut a slot in the end of the six-inch piece. Next, take an X-7 key blank and file or grind the sides off the head of the key. Drill two holes into the rod. Then drill two holes into the cut down key blank.

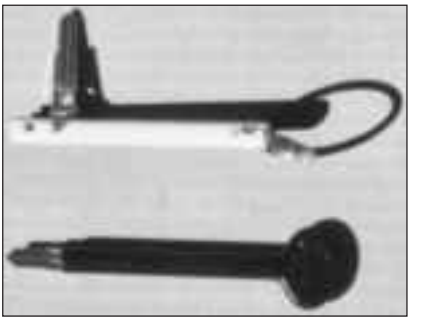

Figure 3.

You can now copy the customer's key, use two small screws and two nuts to fasten the key to the rod. I put a key ring into the other end to make it easy to turn ***(see figure 3).***

Anyone that doesn't want to make their own can buy them from Hawley Lock Supply.

Lamar McCrider
South Carolina

ACE® Tubular Key Trick

Last weekend I received a call from a Harley-Davidson rider. He had run out of gas and had to push his bike over a mile to get to a gas station. At the gas pump he realized that he didn't have a key to his gas tank. He had just bought the bike and the previous owner did not give him a key to the tank.

The switch had a standard single-sided key, but the gas tank

had a tubular lock that used the 137B blank. I had my tubular pick in my hand and was about to pick the lock when for some reason I put a key blank into the lock just to make sure that I had the right blank.

The lock turned to the open position using only the uncut key blank. By this time some of his biker's friends had arrived. Just to satisfy my curiosity, I tried the key blank in a couple of the other bike's gas tanks that had tubular locks. It turned all of them. I don't know if this will work on all of the tubular gas tank locks on Harley's, but it has worked on the ones I have tried.

I have to tell you that I'm sure glad it worked that way, because this guy was no fun to be around.

Luke McCrider
South Carolina

GM 6-cut Key Generation Tip

When a customer brings in a GM 6-cut lock for us to make a key for, I was taught to totally disassemble the lock down to the wafers, measure the wafers or match them up with the new wafers in our 3 in 1 kit.

Removing the spring retaining cap can be a big hassle, as they have most likely been there for many years and often have a tendency to break. However, all of that is not necessary.

After removing the face cap, dust shutter, and springs; I then take the plug out of the shell. Sometimes you have to drill a hole to get to the sidebar, then apply pressure to the sidebar with your finger and rake the wafers to get the sidebar to drop. When it does (it's flush with the side of the plug) you can see the wafers from the top of the plug if you look beside the spring retainer cap.

If you know that a number one cut is almost right at the top of the plug, nearly even with it but not quite, then you can also tell that the deeper wafers would most likely be a four or a five. Obviously, cut what you believe to be a five, to a four, just in case you are wrong, then you can cut deeper if needed.

Through a simple process of elimination you can have a working key within ten minutes. I have done this twice in the last two weeks, and the second time I had a working key with one blank, only needing to deepen my number three cuts to fours.

After you have generated a working key, simply reassemble the cylinder and replace.

Jerry Goddard
Indiana

Editor's Note: Your tip—although it might be "old hat" for some of the seasoned locksmiths here, is as valid today as it was when many of us older locksmiths discovered how much time we could save by reading GM wafers in the old 6-cut ignitions. Thanks for bringing back a workable, still valid and solid locksmith procedure.

Slick BIC Trick for Ford 8-cut Ignitions

In your March 2004 magazine, there is an article about recoding a Ford 8-cut wafer ignition cylinder. I have worked for Ford dealerships for many years while learning the locksmith business and have had to recode hundreds of these cylinders.

The procedure given suggests using a 1/16" nail to push down the ball. That's a good idea, and I can tell you that it will definitely work, however, I think that I have a better way to "seat" the ball and I never have to search through my toolbox to find a nail.

I simply reach in my shirt pocket, grab my trusty BIC click pen and place the end of the pen over the ball and spring.

With the point of the cartridge retracted into the pen, it's a perfect fit and helps hold the ball securely in place when turning the cylinder. This little trick has helped me many times over the years and saved me a lot of time searching for balls that went flying into space!

Ralph McGee
Colorado

Key Decoder

When called upon to code a new GM 10-cut ignition cylinder, it can be difficult to decode the existing 10-cut key if you don't have a gauge. You can sometimes do it by sight, but since it is a sidebar lock, one wrong wafer can result in failure. Then you must figure out which wafer is wrong without a shear line to help spot the culprit.

A simple solution is a homemade key gauge, which can be made for a variety of different types of double-sided keys. Just grab the appropriate blank, (B-89 for example) cut a #1, then a #2, then a #3 and a #4, on one side of the key. Flip the key over and cut the identical cuts in the same spaces you did on the first side. Cut the remaining part of the blank off completely. Now you have a very short looking key with only 4 cuts on each side.

You can now place this gauge directly on top of the customer's key and slide your gauge back and forth until a set of cuts in the gauge visually matches the cuts in the first space of the key. Write that cut number (depth) down and do the same for the rest of the key. Now you know the cuts of the key and can code the cylinder accordingly.

Steve Zemba
California

Ford Aspire Key Generation Tip

Here is a little trick I ran into almost by mistake.

We had a customer that broke off the key to her 1996 Ford Aspire (Korean built). She originally had both pieces, but dropped the business end (with the cuts) in the snow. All she had

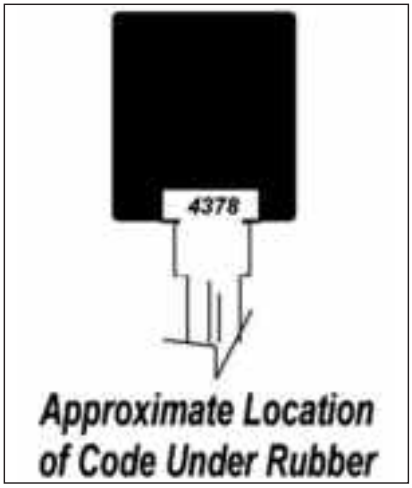

Figure 4.

left was the factory original rubber head of the key.

As I glanced at the key, I noticed that the rubber was torn away, and I could see a number. Acting on a hunch, I took the key to the bench, and with a razor knife, cut off the rest of the rubber head ***(See figure 4.)*** Lo and behold, there were 4 numbers. After checking with my code information, these numbers fell within the parameters of the code series, less the letter "B".

I went to the computer and I added the letter "B" and was surprised to see that a code immediately popped up. We cut a key with the appropriate cuts. Amazingly, the key worked!

Now, every time I get a broken, bent, unreadable, or otherwise damaged original foreign car key (with the head encased in rubber) I gently cut the rubber off, and more times than not, there is the code staring me in the face. It sure beats trying to decode them.

Mike C, Merritt
Iowa

Colorado Key Generation Tip

I received a call on New Year's Day to make keys to a 2004 Chevrolet Colorado. It was my first encounter with this model. The truck was located at a rest area along the Interstate.

Here's what I found when I surveyed the vehicle. It has a locking cylinder on the driver's door, the ignition and tailgate. The Colorado appeared to be one size down from the Silverado.

I attempted to contact Chevrolet Roadside for key codes. The dispatcher informed me that the codes are not yet available to them, also informing me that the VIN indicates this is a test vehicle not yet sold. Roadside also said the vehicle would have to be towed to a dealer to have it serviced. All the local dealers are closed on New Year's Day!

I then proceeded to browse the owner's manuals and Bill of Sale. I found the key code (72656 Ignition and 72565 trunk) on the Bill of Sale. The customer stated that one key worked all three locks (which turns out to be true). Great!

I again called Chevy Roadside with codes in hand, to get bitting information. They again inform me that no code information is yet available—not even bitting for this vehicle, yet.

The customer could not wait for two days to have the vehicle towed and then worked on. So, I informed him of the situation—new key, new code series, no information available to me, and in order for me to make a key, there will be an additional cost. He said to go ahead.

I disassembled the tailgate lock—4 phillips head screws and one 10mm nut later, I had the lock in my hand. There were enough spaces for 9 wafers. Wafer spaces 1–8 are doubled-up: wafers 1/2, 3/4, 5/6, and 7/8 are touching, and 9 is a stand-alone wafer (this was my perception at the time).

The tailgate has wafers located in spaces 3–8. I found after trying my inventory of GM blanks, none of them fit this vehicle.

Working my way through various automotive blanks, I discover an ILCO-EZ MIT1 blank fit the keyway. I did have to remove the entire shoulder all the way to the bow so it would actually fit in the door, the tailgate and the ignition. *(Note: the key slides much further into ignition than into door/tailgate cylinders).* After decoding the spacings and depths (four depths), on the tailgate lock, I proceeded to the door lock. The door panel proved to be simple to pull. There were three Phillips head screws and standard GM door clips with an electronic wiring harness for power windows and power locks, and two 10mm nuts. The door has a similar lock as the tailgate, but with wafers 1–8 used in it.

The key will fit the ignition, but will not turn the ignition. I guessed that the "9th" cut must be used in the ignition and I progressed through the four depths in this ninth position. The key still didn't work. After questioning the customer regarding his key, he told me that a spare key does exist in Florida, where the customer is from.

I told him to have a friend photocopy the key and fax a copy to a locksmith friend of mine. The photocopy was awful and the friend traced the key as well. However, I was able to determine there were two "unknown" cuts that I had not previously decoded. That is when I decoded the door and tailgate lock, I assumed that I was dealing with an eight cut lock. Actually it was a 10-cut with the door and tailgate using cuts three through ten.

Going back to my original numbers I progressed spaces one and two on the final key and generated a working key for the customer.

Here's the long and the short of it:

2004 Chevrolet Colorado: 10-Cut Key, Ilco EZ MIT-1 will pass (but must remove shoulder at blade height all the way to the bow).

The ignition uses all 10 spaces, Door uses spaces 3–10,

Tailgate uses spaces 5–10. There is a 11th cut space, probably, for use with valet key, but not pinned on the Colorado that I worked on.

Here are the spaces as I decoded them and cut them with my Framon 2 (In inches). 1=0.380, 2=0.430, 3=0.530, 4=0.570, 5=0.680, 6=0.720, 7=0.810, 8=0.860, 9=0.950, 10=0.990, 11=1.080.

The cut depths (inches) are 1=0.325, 2=0.300, 3=0.275, 4=0.245. I used a Framon cutting wheel 8445 (84 degree angle with 0.045 inch flat).

The wafers were 0.040 inches thick.

My key showed a maximum cut difference between the touching pairs of 1 (i.e., cuts 1 & 2 or 3 & 4 could not differ by more then 1) and a maximum adjacent cut difference of 2 with non-touching adjacent cuts (i.e., 2 to 3 or 4 to 5 could differ by 2).

The truck did not use a transponder (thank goodness). Oh yeah—how were the keys lost? The gentleman had used the facilities and as he was flushing the toilet his keys slipped from his hands and were flushed away.

Jeffrey Hula
Virginia

GM Glove Box Tip

The cylinder in the GM squeeze type glovebox lock can be very difficult to remove, if you do not have a special tool designed to spread the clips. I do not. So, I made one.

I took a snap-ring type pliers with a forty-five degree end and filed each tip so it was slightly flat like a small screwdriver. These tips can now be pushed between the clips and the cylinder. The clips can then be spread like an outside snap ring.

I placed the glovebox lock face down on an open vise. I then insert the tips of the pliers between the cylinder and the clips. When the handles of the pliers are squeezed the clips are forced apart. All that is left to do is remove the plug and read the wafers.

Bobs Lock Shop
Ontario, Canada

Progressioning Trick

When making a key for the trunk or door locks for GM autos, I have found a method that is often faster than using the GM progression chart.

When progressing a door key from the glove box cuts of 3-2-2-3, the possibilities by progression are—First key: 11-31-42-53-55. Second key: 13-33-35. Third key: 22-24-44. However, by using Code Source, you will find when you go to the code series of the vehicle the following possibilities: 11-31-42-53. In other words, you should have a working key with the first progressioned key. This saves time and key blanks.

This also works on Ford 8-cut systems when making an ignition key from the door cylinder cuts. Here's an example for code series 0001X. For door cuts 1-3-2-1-2-1 with a progression chart you have possibilities of the first key being 12-13-23-33. Second key: 22-24-34-35. Third key: 32. With Code Source go to code series 0001X-1706X and find the bitting that matches to door cuts. With door cuts 1-3-2-1-2-1 the possibilities are 12-34.

This will not work on Ford 10-cut systems.

Richard C. Robbins
Idaho

Ford Door Lock Repair

The call involved six Ford vans. It seems that someone wanted what was inside the vans but didn't have a key. So they punched the lock in the rear door.

My customer already checked with the Ford dealer and the dealer wanted $348.00 per van to repair the damage.

After evaluating the situation, I went to our local home center and purchased electrical reducing washers. With a little filing to the hole in the washer to accept the cylinder, I inserted the lock in the door and re-clipped it. It worked great and, in my opinion, looked good too.

I charged less to repair the six trucks than the dealer wanted (and still made a nice profit) and in addition, sold the customer twelve American hockey pucks and hasps that day!

Mike Gallagher
Illinois

Manipulating a GM 10-Cut Ignition

Like most ignitions, you can gently remove the "ears" from the switch, drop the shroud, drill a hole in the proper location, depress the sidebar, rake the wafers and turn the cylinder, right? Wrong!

You can do all of that (and you have to) but the ignition cylinder will not turn. It has a magnet in it that requires a key in the plug, which, by way of a sensor in the switch releases the magnet.

So, after going to all of the trouble above, how do you get the plug to turn?

Simple: Cut a B0-86 blank to all #4 depths. Insert that blank into the plug and the key will tell the magnet to let go of the plug and allow it to turn!

Joseph Gouviea
South Carolina

Aurora Ignition Tip

This tip is for the 1995–2000 Oldsmobile Aurora. If you ever get a call to originate an ignition key for this vehicle and the customer has a working door key, you're basically home free. The bittings for the door key are the same for the ignition key. The door key is usually cut on a

B85 GM 10 cut blank, and the ignition is cut on a GM 10 cut VATS blank.

This vehicle was intended to be a one key fit all. At least, that's what I was told by some GM technicians. It seems GM ran into a problem getting the VATS key to work in the door of these vehicles. The pellet on the side of the key interfered with the insertion of the key into the door lock. So, GM used two different keys, but kept the bittings the same on both.

I've found this to be true on the last five that I've done. This is, in my experience, also true on the 1995–99 Buick Riviera and 1997–99 Buick Century and Regal.

Jonathan Muhammad
Georgia

Jeep/Saturn/Chrysler Ignition Trick

It concerns a simple method for removing the Strattec Ignition (#705098) from various Dodges, Jeeps, Chryslers and Saturn's.

This method does not destroy the ignition, although you have to be careful not to lose the active retainer, so you can use this technique whether the ignition is damaged or not. You'll need a tool like an ice pick, and a pair of pliers, the locking types are nice if you have them.

A spring steel plate holds in the active retainer on this style of lock from the exterior. The shape of the plug will stop you from pushing the retainer in unless the cylinder is turned, but the way the retainer pin is installed is its weakness.

First, you'll need to remove the lower part of the column shroud, and also possibly the panel underneath the column. Once the shroud/panel is gone—depending on the model. Locate the active retainer and insert your ice pick, or probe, alongside the pin. Tilt the ice pick in such a way as to pull the retainer pin down and out of the hole.

At the same time, grab the pin with your pliers (use your locking pliers if you don't want to lose hold of it) and pull down with a slight jerking motion. The pin should pull free of the flimsy spring steel fork holding it in place, and the ignition will then be in a position to be removed, with little or no resistance.

From there, you can either replace the ignition (if necessary) or you can drill an access hole for the sidebar, pick the lock, and fit a key.

Ryan Hernandez
California

Pick Key Tip

When I first found out about pick keys for autos, I made sets for the GM 10-cut, the Chrysler 8-cut and the Ford 8-cut. Those keys worked on about 25% of the cars and trucks that I tried them on.

Later I made new sets of the same keys using half cuts. For Ford I used a 1-1/2 depth to cover cuts 1 & 2, 3-1/2 to cover cuts 3 & 4, and a 5 cut. On GM 10-cuts and Chrysler 8-cuts, I used a 1-1/2 depth for 1 & 2 and a 3-1/2 to cover cuts 3 & 4.

Using both sets of keys, I now open about 90% of the cars and trucks I try them on.

Herbert McCrider
South Carolina

GM 6-Pin Spring Retainer Tip

I don't know how many times I've tried to remove a GM 6-cut spring retainer, when part of it breaks off, and it's nearly impossible to get the broken part out without damaging the lock. While working on a 1994 Buick LeSabre with a VATS ignition, I came up with this little trick.

The VATS key wouldn't work in the ignition, so rekeying was probably all I needed to do. Unfortunately, one tab of the spring retainer broke while removing, and I didn't have a replacement VATS ignition, so I had to be careful not to damage the lock.

I purposely left the broken part of the spring retainer in place and rekeyed the lock. When it was time to install the spring retainer, I filed one side of a new spring retainer to a "V". ***(See figure 5).*** With a small flat screwdriver, I opened the slot containing the broken tab a little bigger to accept the side of the spring retainer with the filed "V".

Figure 5.

Because of forcing the spring retainer to seat, the chamber next to it was slightly distorted. I left that chamber empty to prevent operational problems for the customer.

I did stake the spring retainer down and it worked great. I've since used this method several times without problems.

Dave Gonelli
Idaho

1999 Intrepid Ignition Trick

I had a vehicle where the key would not operate the doors and trunk, but not the ignition. I decided that I would drill the sidebar on the cylinder so I could pick the lock to the accessory position and remove the cylinder for servicing. I recalled that the retainer pin that holds the cylinder in the column housing is held in place by a thin piece of spring steel. That gave me an idea.

I removed the upper and lower shrouds. Using a very small, flat bladed screwdriver (similar to the one you would

use on your glasses), I wedged it between the retainer pin and the ignition housing and forced it down far enough to where I could grab it with a pair of needle nose pliers and remove it.

Once the retaining pin was removed, the lock slid out of the housing with ease. And I did not damage the piece of spring steel that held the pin in place.

With the cylinder out of the housing, I drilled a hole over the sidebar, picked the plug so I could service it and reinstalled it back in the housing.

The entire job took me about fifteen minutes.

Paul Giuliano
California

GM Six Cut Tip

Generating a working door key for a 6-cut GM is easily accomplished by pulling the glove lock. The glove box lock, as you know, gives me four of the six cuts, then I progress the other two. What can be difficult is popping the plug out of those "squeeze-type" locks.

Here's what works quite well for me: I clamp the whole lock case in a vise with the bottom of the plug facing up. Of course, I'm careful not to crush the plug. With my retaining ring pliers, I spread the plastic tabs, which lock into grooves on the sides of the plug and spread those tabs as far as possible.

Next, I use an automatic center punch to pop the plug out. It's quick and doesn't damage the tabs.

Bob Nilles
South Dakota

Ford Lock Fix

A common problem of the Ford 10-cut ignitions is that the ears become loose. This often results in difficulty in inserting or removing the key. Normally the only cure is to replace the lock and advising the customer that if they put much torque on the ears of the new lock, the problem will reoccur.

I discovered a repair that would make it almost impossible for the ears to ever come loose, no matter how much pressure was put on them.

Remove the lock from the vehicle and remove the plug from the cylinder. Insert a blank into the plug to keep the ears lined up with the keyway. Locate the groove that originally peen-ed the ears to the plug. Drill a 1/8" hole perpendicular to the keyhole—90 degrees to the right of the buzzer activator (where the metal is the thickest). Make the hole about 1/4" deep, being careful not to penetrate the keyhole.

Place some steel epoxy or something similar, in the hole and drive a roll pin into it. When the epoxy dries, grind the pin flush with the plug and the ears will be permanently and rigidly attached to the plug.

Jim Troeller
California

Ford Trunk Lock Tip

I don't know whether it's a design problem or just the environment in my area, but I service a lot of Fords that exhibit trunk lock problems. In the last few weeks I've had three Taurus trunk lock cylinders that were seized so tightly that the key in one broke off.

I've found a way to circumvent the problem. Before I drill I use Houdini lubricant. First I liberally spray the plug and let it set for about five minutes. Then I spray it again and work an uncut blank in and out of the plug.

Then I use the customer's key, or one I've generated, and try the lock. So far this little trick has worked every time for me.

Houdini is my personal favorite. I'm sure you will get the same results with whatever your favorite lubricant is.

Frank Kitchen
Indiana

Bypassing The Hardened Plate in A GM Ignition

When all else fails and you need to drill through the hardened disk on a vandalized GM ignition, this really works fast.

Get your Dremel tool and cut through the top and bottom portion of the keyway. Now you have two halves of a hardened disk. With about a 1/8" gap between the two pieces, you can push each piece to the center and pry them out easily.

The sidebar is hardened so drill in front of it, push the sidebar in, pick the wafers and turn the ignition for removal.

Mehdi Zahedi
Ohio

Ford 10-cut Ignition Tip

I'm sure you've all seen this problem too many times. Those pesky Ford 10-cut ignition locks and how easily the "ears" can break loose and actually spin around without a key being inserted.

A couple of solutions are to either replace the ignition lock, which I usually do unless I'm out of stock, or drill a small hole and install a roll pin.

Both are great problem solvers and I would recommend either. But if you are ever in one of those situations where you do not have and extra ignition lock in stock or your fresh out of roll pins, then consider this third alternative.

I just discovered another method that seems to work very well. Loctite® (red) seems to me to be a quick and viable fix. Knowing how strong red Loctite® was, I just had to try it on one of the Ford 10-cut ignition locks I had encountered where the faceplate would spin on the ignition.

After several experiments, I found that I really had to abuse the ignition lock to get the wings to break the Locktite® bond.

When I say abuse, I mean using a pair of pliers or large Crescent® wrench to force the ears. I find the tabs will break before the Loctite® bond.

The following is a description of the procedure I use:

Remove the ignition lock and completely disassemble it. Do not remove the tumblers, springs and retainer cover. Clean the area right behind the faceplate where the plate was originally press fit to the ignition assembly.

A good cleaning solvent that cuts through grease and grime will work. I use Houdini as my cleaner.

Once the area has dried, make sure the cap and ears are properly lined up and insert a blank key. Check to make sure the keyway and key blank are uniform and properly aligned. Next place the ignition in a vise, making sure the head of the key and wings are horizontal. Also make sure the faceplate extends beyond the vise's jaws.

Now you are ready to apply several drops of the red Loctite®. You will only need to apply four or five drops around the ignition housing where the ears were originally pressed on. I like to apply 2–3 drops on one side and then take a small bladed screwdriver and smear the drops around the housing. I make sure not to get any Loctite® into the keyway or on the key. Once the Loctite® starts to set, I will turn the ignition lock over and repeat the solution application.

Let the Loctite® dry. Usually no more than 15–20 minutes. Once the Loctite® has dried, the faceplate with the ears will not come loose for a long time. Reassemble the lock and test it with the original key. Make sure it is operating properly before you reinstall the lock back into the column.

From start to finish it is about a thirty-minute job. Keep in mind that I recommend this method only be used as a last resort.

Woody Quiñones
Florida

Another Approach to Ford 10-Cut Fix

Using roll pins to prevent the ears from spinning on a Ford 10-cut ignition is a nice way to repair the problem. However, I have found that a .350 Lab pin also works well.

Simply align the keyway, faceplate (use a blank key), and drill the proper sized hole. Put in a dab of SuperGule® or Loctite® then the Lab pin and the job is finished.

Although the roll pin is very secure, I have found that the Lab pin works just as well and only takes about ten minutes to do the entire job. Fast, simple and easy. And, best of all, we all have pinning kits on the truck, so there's little hunting for the right part to do the job.

Brian Bristow
California

Ford Focus Ignition Removal Tip

Not having a drill bit to go through the hardened metal of the Ford Focus ignition, I decided to see if I could remove the transponder antenna, and then use my RotoZip with a metal blade and cut the top of the ignition off. There is one #20 Torx screw holding the antenna in place. I removed the screw and set the antenna in a safe place.

Next I cut the top 1/4 off of the ignition and had only a very small piece of the hardened metal left on the ignition. I pulled it out and used a drill to drill into the switch and removed all of the wafers in a matter of a few minutes.

After drilling out the wafers, I was able to turn the ignition switch and depress the retainer, which allowed me to remove the switch and then install a new unit.

Wayne Gow
North Carolina

Editor's Note: Wayne, good tip. But there is an easier way now. I gave a seminar to the Northern New Jersey Locksmith's Association, and Frank Markisello with AABLE Locksmiths, showed me his prototype tool for quickly and easily removing the Ford Focus Ignition. By the time you guys and gals read this, Frank should have that tool on the market. Contact him at: (718) 847-1377; Fax: (718) 847-0991.

GM Progression Chart

This progression chart is for the GM ignition spaces 1–5 when you have spaces 6–10 from the door. I use this chart when I need to find out the first five cuts for the GM sidebar ignition.

What I do is, I find the cuts for spaces 6–10 in the door and put those cuts on both sides of an uncut blank. Then I place the 1/2 cuts from the chart listed below in spaces 1–5.

The good thing about these sidebar ignitions is, the tumblers are only on one side. Which means I only have to work with one side of the key at a time. I usually have a working key within three blanks.

Place these 1/2 cuts in spaces 1–5

A number 1 is cut to a 1-1/2 depth and a number 3 is cut to a 3-1/2 depth.

Key #1, Side One: 11111, 11113, 11133, 11333, 13333, 33333

Key #1, Side Two: 11131, 11331, 13331, 33331

Key #2, Side One: 11311, 13311, 33311, 33313

Key #2, Side Two: 13111, 33111, 33113, 33133

Key #3, Side One: 31111, 31113, 31133, 31333

Key #3, Side Two: 13113, 13133

Key #4, Side One: 13131, 33131

Key #4, Side Two: 11313, 13313

Key #5, Side One: 31131, 31331

Key #5, Side Two: 31311, 31313

When I get a key that turns, I can get the exact cuts for spaces 1–5 by checking for marks or by trying the shallowest cut, and then the deepest cuts of each space. While I'm doing this I leave the other full and half cuts the same. This works for me, and will work for you.

Jonathan Muhammand
Georgia

Broken GM Glove Box Fix

I was asked to make a key to the trunk of an older GM vehicle. I was in a hurry that day and as I was taking the glove box lock apart to get the last 4 cuts of the key, I somehow broke the ears that retained the cylinder plug in the housing.

That of course meant the cylinder plug would not stay in the lock housing. Looking for a way to solve the problem (I did not have another lock on the truck), I noticed that the back of the plug has a groove cut around it to accept the "ears" of the retainers.

I measured back on the housing where the back of the plug stops, and drilled a hole in the housing in line with the ridge on the plug. I then screwed a sheet metal screw in the housing and in to the ridge of the plug. It's the same principal as a setscrew holding a mortise cylinder.

I put the glove box back together, collected my money and went on to the next job.

Bill Wessel
California

GM Wafer Removal Tool

I found a very easy way to pull the wafers out of a GM sidebar lock. I use an HPC diamond shaped pick (Model # HPLX-10). This is the .028" thick model, which is much stronger than some of the thinner ones.

I file a small amount off the tip of the pick to make it just the right size to fit tightly into the top of a GM wafer. To pull the wafer out of a lock, insert the modified pick at an angle and then turn it to the vertical position. This will wedge the pick into the slot in the top of the wafer. Then, all you have to do is pull, and the wafer slips out. ***(See figure 6.)***

I've been using this tool for about 5 years. It has always

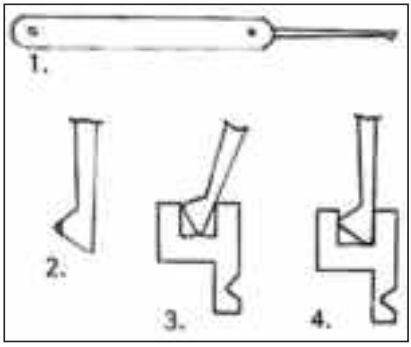

Figure 6.

worked perfectly and has saved me a lot of time.

James L. Starks
Colorado

Plymouth Voyager Code Tip

I recently had a call to originate a set of keys for a 1985 Plymouth Voyager. It had a 5-pin trunk and glove box, but no codes. Bob Sieveking's book suggests impressioning, or disassembling and reading the pins to make a key. I checked the hatch on the van and found that the lift back used the same key as the doors. I also found that there was very easy access to the cylinder, so I decided to pull the hatch cylinder and I found a code stamped on the cylinder! I looked up the code and cut a key, which worked all the doors and the ignition.

I'm guessing that this might apply to the Dodge Caravan in the same year range (84–86).

As it turns out, the code is stamped on the side of the cylinder and can be easily seen if you have good eyes and a light. Which means you don't have to actually pull the cylinder to generate a key.

Frank Kitchen
Indiana

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Notes

Nissan/Subaru Code Tip

In the May issue, K. D. Harris of Kansas noted a code placed on the tailpiece of a 1992 Nissan NX.

Recently, I had an occasion to make a key for a Subaru wagon with the D25 keyway. I also found a five-digit number stamped on the tailpiece. Dropping the first number did give me the correct code for this lock in the X series.

Removing the lock on this car was not a simple task and putting it back in was extremely difficult. My point is that in the future, I will just remove the door panel (which is not difficult) and read the code off the tailpiece.

Raiford Ball
Tennessee

Toyota Code Tip

Recently, I had a 1992 Nissan NX for which I couldn't impression a key. Finally, in a frustrating attempt to generate a key, I pulled the passenger side door lock. Much to my surprise, there was a code stamped on the lock's tailpiece.

The code consists of five numbers—the last four are the code. Just place an "X" in front of the last four numbers and look the result up in your code book.

This one made me earn my money; and I thought I might share this with those that may not be aware that these vehicles have a code on the tailpiece.

K.D. Harris
Kansas

Lexus Trunk Opening

I worked on a 2003 Lexus ES300 where the keys were locked in the trunk. One local locksmith said you had to get keys from Lexus, One said you had to drill door lock, and Lexus said you had to get keys from a Lexus Dealer I opened the vehicle with an under-the-window tool, then prepared to pull the panel and hot-wire the security system in the door.

On the driver door there was a plastic access port. Once removed it allowed access to a T-30 headed screw that once removed allowed for the easy removal of the driver door cylinder (similar to the old VW door handles, but only cylinder to be removed on the Lexus). I inserted a #3 Phillips screwdriver and activated the linkage security switch by rotating the switch counter-clockwise, clockwise, counter-clockwise then clockwise. The alarm was deactivated which allowed the trunk release to function. The customer was thoroughly impressed.

Jeffrey Hula
Virginia

Shimming Sidewinders Keys

Here's a trick I've used successfully in the past when a customer comes to me with a 2 or 4-track key that's giving them trouble when they try to turn the ignition to the on position. My experience has taught me that this symptom often manifests itself because the key is worn (or perhaps, even miss-cut) and requires the customer to wiggle,

jiggle and bounce the key to get the ignition to turn.

I simply tear off a small piece of index card and use it to "raise" the customer's key in the jaws of my Framon Sidewinder Machine and copy another key. This usually solves the problem. In the case of a worn ignition it gives me a key that will allow me to remove the ignition on Mercedes and BMW's.

Bill Wingard
Arizona

Another Way to Attack A Camry Ignition

The ignition on a 2000 Camry was changed and it didn't match the rest of the car. The owner refused to let me remove the steering wheel so I could get my face close enough to read the wafers on the in-dash lock and no amount of picking worked.

With the steering wheel in the way, drilling was not possible because of the angle, and impressioning broke two keys.

What finally worked beyond my expectations, was attacking the retainer with a Dremel #193 end mill. (A #194 may have worked better, but all I had was the #193).

Since I did not allow the bit to cool off, the end mill bit eventually melted the tip, but not before drilling a bull's-eye down the center of the retainer. I finished it off with a grinding stone. Total actual drilling time, less than two minutes, and the ignition slipped right out.

David Craig
Illinois

Dremel Tools and Shear Bolts

I had a 2001 Nissan Frontier that was recovered and needed to have the locks changed. The door panel wasn't a problem to service, the ignition was the real challenge. When the factory installs the ignitions, they use sheer bolts. These bolts break off when the bolt is seated, leaving no way to remove the bolts. I have watched several locksmiths use a chisel and hammer to remove these bolts. I tried, to no avail. I tried to drill a hole on the headless bolt so a punch could seat inside, again no good.

Finally, I used my Dremel Moto Tool with a used cutoff wheel on it so I wouldn't cut the housing. All I did was cut a slot on the bolt, and then used a flat blade screwdriver to unscrew the bolt. It was out in no time!

Jerry Dionisio
Colorado

Substitute Key for Daewoo Leganza

I was called to a local Nissan dealership to make a key for a 2000 Daewoo Leganza. This model uses a DWO5AP key blank. I had plenty DWO5AP. Of course, they would not work.

My Ilco key reference chart does not list a substitute.

After I tried several other blanks I found that the Suzuki blank SUZ151X185 worked perfectly. After finding the blank I pulled and disassembled the trunk lock. Each tumbler is numbered so originating a key is easy.

It took me less than fifteen minutes to make the key, reassemble and reinstall the lock, once I had found the perfect substitute.

Douglas M. Bibee
North Carolina

Duplicating Worn Nissan Keys

This has to do with making keys for Nissan's, and was discovered by accident. All of us who do automotive work have had calls to remove broken keys from Nissan's. Most of the time, the key is too worn to read or duplicate.

If you have an original for the car, usually indicated by the Nissan logo rubber head, simply cut the rubber head away, and find the code number underneath. On the older square head Nissan keys, the code was visible. On the newer style oval head keys, it is hidden. I use a razor knife to cut the rubber, and hold it in my vise to protect my fingers.

The code will be four numbers. Just add an "X" and look it up. I have done seven of these in the last two months, and the key was stamped with the code each time.

Richard Cybrynski
North Carolina

Volvo Glove Box Lock

Some Volvos, from the 1980's, have a particular style of glove box lock that has a propensity to fail unexpectedly. When they do, this tip is an easy way to remove the lock for replacement.

These particular locks are easily identified by the turn knob that surrounds the keyway. The knob has a rubber grip, which is fairly simple to remove, but the removal isn't absolutely necessary. When these locks fail, it is usually because the rear of the cylinder is no longer actuating the mechanism that retracts the small latch-bolt that keeps the box closed.

The glove box door on these Volvos has a plastic exterior shell in which the lock is housed. If you take a large pair of Vice-Grips or Channel-Lock pliers and clamp down on the turn knob, you can force the entire lock to turn from 45 to 90 degrees, and simply pull the glove box open.

The lock is mounted in a "D" shaped hole, much like a cam lock, and by turning the lock you are causing the plastic housing on the door to flex. If you are careful and try not to "muscle" the lock too much, no damage will result from turning the lock and the "D" cutout will remain usable for the new lock.

We've done it on at least 10 cars over the last few years. The lock will have to be replaced, of course, but you should be able to get another from your local Volvo dealer.

Larry Bors
Oklahoma

Camry Ignition Tip

We do a lot of repair work on the mid 1980 to early 1990 Toyota Camry's here in the Bay Area. Most of the time we deal with vandalism and theft, which more often than not requires that we replace some, if not all of the locks.

This tip concerns the ignition lock. On more than one occasion, an ignition I have serviced or have been trying to install, has fit into the housing on the column very snugly, sometimes to the point of having to force it in. This leads to two problems, one of which I understand, the other I'm not too sure about.

Obviously, the tight fit of the ignition causes problems with removal at a later time. Oddly, the ignitions tight fit can also cause the warning buzzer to go off continuously when the driver's side door is open, as if there were a key in the ignition even when there isn't. I don't entirely understand why this is, but I think it has something to do with the ignition not being seated properly within the housing.

The fix is simple if you have a razor blade or flat-bladed screwdriver with you. Look at the ignition with the word LOCK on the face at the 12 o'clock position. At the 9 o'clock position on the side of the ignition you will find a small flat piece of rubber, running horizontally alongside the lock body. It is this rubber piece, more often than not, which causes the ignition to have such a tight fit and the key buzzer to go off indiscriminately.

If you use a good razor blade, you can shave off layers of the rubber until the ignition "seats" as it should. Or, you can use a screwdriver, and just pry the rubber piece out. After that, the ignition will insert smoothly, and no more problems with the key warning buzzer should be evident.

Redd Bristow
California

Check That Remote!

I received a call to retrieve the keys from the trunk of a 1997 Toyota Avalon. The police had already opened the door and tried to activate the inside trunk release with no success.

I disassembled the door panel to access the lock code and made a key for the vehicle, with which I opened the trunk. End of story, right? Wrong!

The key that I made would turn the ignition, but the car's engine would not turn over!

I asked the customer for her key. Her key ring had a remote fob on it. I hit the "unlock" button on the remote, turned the key I had made and the engine started right away!

So, if you find yourself in a similar situation, check the remote!

Curtis Martin
Georgia

Editor's Note: Curtis, I'm not 100% sure, but if you had tried the key in the door and "unlocked" the door, I think you would have been able to start the car, since many of the security features in the later model cars are tied into the door locks. However, I'm curious that if the police had "opened" the car, why the alarm had not activated? If the alarm did not activate and the remote "unlocked" the system to allow the car to start, there may be other problems with the system the customer should be made aware of.

Audi S80 Trunk Opening

To open an Audi S80 trunk, first remove the right light over the license tag. ***(See figure 7.)*** Then

Figure 7.

Figure 8.

insert a tool similar to the Tech Train TT1007 and hold it horizontally. Keep the working end of the tool to the left side of the automobile.

Next, rotate the tool counter-clockwise, then move the tool downward and to the right until it comes in contact with the actuator of the locking mechanism. ***(See figure 8.)*** Apply slight pressure with the tool to the actuator and open the trunk.

Andrey Kondratiev
Russia

Editor's Note: Andrey, Thank you for your tip. Look forward to hearing from you again. To the best of my knowledge, this is the first time that we have ever printed a tip from Russia.

Jumping a Lexus Trunk Tip

I was asked to open a 1995 Lexus GS300 with the keys locked in the trunk. The doors were unlocked, but the valet lock for the trunk release was locked.

My AutoSmart indicated you could drop the lower dash panel and there is a clip around the lock that you can remove allowing it to unlock. I didn't see the clip, but I could see a two-wire electrical connector on the back of the trunk release switch. The lower one ran to the back of the lock. I disconnected it so I could reach and disconnect the upper one. Using a "U" shaped piece of wire, I jumped the upper wire connector and popped the trunk.

William Kimbley
California

Editor's Note: William, thanks for sharing this with us. The only word of caution I would add is to be careful about "jumping" or bypassing any electronic systems or wiring in many of the newer automobiles. A wire improperly attached or touched to a contact on many new cars can have disastrous effects on other systems within that vehicle. That could open you up to liabilities that you might not want to deal with.

Merkur Key Origination Trick

Here's a tip for making a key for the Merkur XR4Ti. Most manuals say the code is on both doors and sometimes the trunk, which means you have to take down the door panel or bypass the trunk lock. If you don't want to disassemble a door panel, go to the glove box. It's a squeeze type lock just like on some of the GM's. Remove the clip that holds the lock in and remove it.

With the lock out, spread the two tabs on the back to remove the cylinder from the front. The code is on the cylinder. The code series is

TX 001-1859, and this car was in production from 1985 to 1989.

Jonathan Muhammad
Georgia

Key Origination for '98 Kia Sephia

Recently I discovered that the ignition switch for a '98 Kia Sephia has numbers visible on all seven wafers. Using a light to see the switch and a hook pick to manipulate the wafers, I was able to read all the digits and cut a key by code on my HPC CodeMax.

The numbers were backwards from the specifications in the CodeMax, i.e., 4=1; 3=2; 2=3; and 1=4. When I cut the key using these inversions it worked. I would expect that all the vehicles in this code series (Y7001-8200) would work the same way, but can only speak for the '98 model.

John E Hines
Texas

Honda Key Fix

A customer could not remove the key from the ignition of their 1997 Acura CL. The key would not push in far enough to allow the ignition to be turned to the locked position, which would allow the key to be removed.

The problem was that their new duplicate key had been cut on too short a blank (the older X193). The proper blank for this vehicle is the X214 with a longer shoulder that will allow the key to be pushed in far enough to allow the ignition to be turned to the locked position.

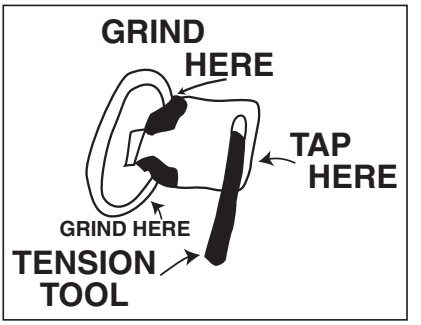

Figure 9.

After checking the length of the X214, I carefully used my rotary tool to shape the head of the stuck blank by cutting away the shaded areas as shown. ***(See figure 9.)*** Then I attempted to push the key in and turn it to the locked position. It still would not turn.

Next, I inserted a tension wrench, and while applying slight turning pressure on the wrench, I used a small plastic mallet to gently tap inwards on the head of the key. That was enough pressure to allow the key to turn, but not enough to do any damage to the ignition.

Once I had the key removed from the ignition, I simply cut another key for the customer on the correct blank, which solved the problem.

In checking the 1998 Ilco Auto Truck Key Blank Reference, the X193 was the recommended blank for this vehicle. A later issue of the Auto Truck Key Blank Reference had the proper blank-the X214 is listed.

Dave Boemer
Idaho

Editor's Note: Dave, A similar situation happened about 1987 with Honda. A longer blank was required for the new Hondas and the older blank would

cause the ignition to seize as you described in your tip. With reference to the Ilco key blank reference, Ilco did, as I recall, send out notices that the reference was erroneous and informed users of the proper blank to use. As you mentioned, Ilco corrected the information in subsequent issues of their reference.

Jaguar Trunk Opening Tip

I just worked on a 1986 Jaguar XJ6, where the trunk wouldn't open. I could hear something loose as I worked the key, but it wouldn't release the lever.

To open the trunk, I removed the license plate and underneath found two rubber bumper strips to keep the plate from rattling. I removed the bumper strip on the left and found a 1/4" by 1-1/2" hole. I inserted a long screwdriver in the hold and tripped the latch to open the trunk.

John Wallace
California

Mercedes Key Tip

Late one cold, rainy afternoon, I was on the way home from another day of picking and grinning. I stopped at a local store to get some gas and something cold to drink. I saw a line of cars behind a Mercedes parked at the pumps. I didn't want to wait in line so I pulled up and parked outside the door.

On the way into the store I noticed an elderly couple huddled at the phone booth trying to keep dry. The store clerk said they had called a tow truck and had been waiting for over an hour. The clerk was upset because the Mercedes had his pumps blocked. On the way out I stopped and asked them if I could help. The man said his key (an S48HFP) wouldn't work. He said he had taken the car to a local Mercedes repairman a few weeks ago because the key had been giving him trouble. The lady said the drivers door lock had not worked in a year or so.

I told them that I might be able to help them. They both laughed and the elderly man said no one could help but the Mercedes repairman. The repairman had told them he would have to take most of the dashboard out to install a new lock. They were told it would cost about a thousand dollars. The man gave me the key and, with a smile told me I was going to get wet for nothing.

I went to the passenger door and the key worked. I then went to my van and installed a slightly larger tracer point in my Matrix SLX machine. This would make the cuts on the key I was about to cut ten thousandths shallower than the customer's key. After cutting the new key, I found that it worked well in the passenger door and in the driver's door too!

As I was being paid and hugged, the tow truck arrived. The driver was a friend of mine and agreed not to charge the elderly couple for a service call if I would open a car for him the next time his slim Jim didn't work. A few days later the tow truck driver called. He said he had a call about another Mercedes with the same problem. It was owned by a local beauty shop owner who rushed to the hospital to see her grandmother.

The car was parked in front of the emergency room. I used the same method as with the other Mercedes. It worked again.

I am assuming that the wafers had worn and by cutting the key shallower compensated for the wear and allowed the key to work properly again.

Herbert McCrider
South Carolina

The Short and The Long of Honda Keys

I had a customer with a key stuck in his 1994 Honda Accord EX. The key would not turn back far enough to come out. It was turning smooth and easy, and would crank the car. Just wouldn't turn back far enough to come out.

When I arrived he told me that he had gotten the key cut some time back, and when he tried it out, it got stuck. Upon looking at the key, whoever cut it had cut it on a X195 blank, instead of a X214. The X195 is for a 93 Honda Accord and the shoulder is not as long as the X214.

When the X195 is used instead of the X214, the head of the key will not allow the ignition to be pushed in to turn because it is to short. To fix the problem I simply cut the head of the key off. Put my needle nose vise grips on the blade of the key sticking out of the ignition, pushed in and turned. Key came right out.

I duplicated the shortened key on the correct key blank (X214) and it worked fine.

Marc Grizzard
South Carolina

Geo Key Extraction Tip

A customer had somehow broken off the very tip of the key to her 1995 Geo Metro. This is how I extracted the key.

First I used a proper blank (uncut), broke the tip off approximately as far back as hers had broken (If the customer has the remainder of their key, you can use it for this next part) and inserted it into the ignition. This gets the tumblers out of the way.

Next, I threaded a spiral extractor down each side of the key, using the millings on the key to guide the extractors.

Then I clamped the key and the extractors together with Vise-Grips, placed as closely to the face of the ignition as I can get them. The key and the extractors should be virtually "welded" together by the Vise-Grips.

Then, I used a screwdriver handle between the housing and Vise-Grips and leveraged the key and extractors out of the ignition. The tip of the broken key came right along with them.

Cory Schmidt
Minnesota

Editor's Note: Cory, thanks for bringing an effective means of removing key fragments from ignitions. The only caution I would add is when you use anything to pry against the ignition housing, you need to exercise due care not to put to much stress on the housing.

I have had good luck in the past by clamping the Vise-Grips parallel to the keyway (that is straight out from the keyway and pulling with both hands). Of course, success depends on how tightly you grip the tools and how much pull you can exert.

Paint Protection Tip

Here is a tip to help protect car paint when you have to gently spread a door and frame to open a car.

I know they make a plastic strip for this type of entry, but my problem was the plastic kept falling ever time I moved the tool. What I have done is cut a plastic sheet 3" by 9" and insert it into heavy Denim material (I made a pocket of the denim from some old jeans) with a magnet at the top and bottom of the plastic. The Denim material protects the car finish and the magnets hold it in place while you are working the tool into the car.

Another time saving tip is when working with ASSA systems, take a blank and cut it down to the deepest cut in all 6 positions. When you are doing a master key system, use this key to load all the bottom and top pins into the cylinder. This keeps the side bar in place and lets you load all the pins into the cylinder at one time.

Larry Teal, CPL
New Mexico

Generating Keys for the New Scooters

Making keys for scooters is usually easy to do. With all the different models now, most of the low dollar ones have a real cheap ignition switch and no other locks to deal with; but you must use caution…these ignitions are usually made of plastic and will break fairly easy if you try to impression them too hard.

They all, or most, have a retainer in the end of the plug that can be easily depressed with a hook pick and then pulled out. Find a blank that works the keyway, I have had good luck with the "YH" series of blanks for Yamaha's, and hand file the cuts. Reinstall and you're done.

Frank Kitchen
Indiana

Bifocals and Under-The-Dash Work Tip

I have read many times the solutions mentioned by locksmiths who have the same problem as I do. That being how to see up under the dashboard of an automobile when you wear bi-focal glasses.

Wearing them upside down is not very satisfactory, and wearing them on the end of your nose is not very comfortable. Also I am getting too old to be crawling underneath, and even if I could, I couldn't look up far enough to see what I need to see.

My solution was to have the lens duplicated on the top with the same, or just a shade weaker, prescription lens cut. I can now see through the center of the lens, or if it needs to be magnified by the bi-focal, I can look through

either the top or the bottom of my glasses. This really helps.

Richard M. Reppert
California

Editor's Note: Richard, I've been there and done that. I worked for a long time by turning my glasses over and reading through them upside down. Like yourself, the glasses were hard to keep in place. Anyway, your suggestion is a good one. However, if you don't want to spend a hundred bucks for another pair of glasses—go to your favorite discount store and look at their "reading glasses". If you know your lens "number", just buy a pair of reading glasses to match that prescription and you're in business!

I did that for working on the computer. That way I don't have to crank my neck at an awkward angle to read the screen. I keep a pair in the truck for bench work, I keep a pair near my computer and I keep a pair near my reading material.

Transponder Blank Tip

When transponders hit the scene around 1996, there were very few transponder blanks to keep track of. The good thing about that; is that they were easily identified. Today, that doesn't apply. Along with the increase in the number of blanks available, the price could range from $5.00 to $59.00 in the aftermarket.

What makes it even worse—especially for the unwary, or unprepared locksmith—is the fact that a five-dollar blank can look like a sixty dollar blank. And of course, the five-dollar blank and the sixty-dollar blank are not compatible. So, you can easily blow sixty dollars by inadvertently cutting a key on the wrong blank. The end result will be that you wasted an expensive blank, because you thought it would work and it didn't.

Compounding our problem is the fact that several blank and vehicle changes may occur before the information on which key to use on which car filters down to us. So when you're not sure about which key to use and you don't want to waste an expensive transponder blank, try this:

1.Stick your mechanical key in the ignition.

2.Get your programming tool ready.

3.Get the transponder blank you're not sure about, and place it next to the bow of the mechanical key. Remember to keep it there.

4.Attempt to program vehicle.

If the vehicle programs simply duplicate the cuts to the transponder key, and you're done. If it doesn't work, it means you're using the wrong blank. This also means you didn't waste a valuable key blank. Now you can try another transponder blank. This method will also let you know which blanks are compatible with the different cars.

Remember this method is only to be used when you're not sure which blank to use, and the info is not in your instruction manual, and tech support can't be reached. Always revert to your manual first.

This method has saved me transponder blanks, and will help you save as well.

Jonathan Muhammad
Georgia

Multiple Determinator Uses

I love using the Determinators. I don't own all of them, but I have found I can make some of them pull double duty. The most recent discovery was on a 2001 Ford Focus which calls for a different Determinator than the standard Ford 8-cut. However, I've found you can still use the standard Ford 8-cut Determinator by adjusting the readings. Using the standard Ford 8-cut to read the Ford Focus, you have to pretend that the #1 mark is actually reading the 2nd wafer and the 1st wafer will trap (if it is a trappable wafer) in the blank area in front of the #1 mark on the tool. Adjust the readings as follows:

Tool mark=Key cut: 0=1, 1=2, 2=3, 3=4, 4=5, 5=6

Once you have determined the door key, progress the ignition cuts as normal.

The Chrysler 8-cut Determinator has come to be particularly handy and is usable on the 7-cut Chryslers from 1993–97. This works on both the Y157 and Y155 key-blanks. Adjust the readings as follows:

Tool mark=Key cut: 2=1, 3=2, 4=3, 5=4, 6=5, 7=6, 8=7

Remember, on most 1993–95 models you are only reading cuts 3–7 in the door, while on most 1996–97 models you are reading all seven cuts.

The Chrysler 8-cut Determinator will also works for me in determining cuts on 1990–92 models using the Y154 key-blank where cuts 1–5 are in the doors by adjusting the readings as follows:

Tool mark=Key cut–3=1, 4=2, 5=3, 6=4, 7=5

William Kimbley
California

Lockout Tool Tip

Here's something I found useful in automotive lockouts. I think everyone has a "through the door" tool in their van. I bought several air wedges and have found if you go to an RV parts and supply store, you can purchase an awning rod.

These are used to pull out awnings found on most campers. They are the right size and strength to use as your lockout tool. I have used this to open trunks, hit unlock buttons, etc. It works great and is a little thinner than the factory ones and I don't have to pry the door as much.

Thad D. Schlotterback
Arizona

Replace The Cylinder Codes When You Replace the Cylinder

Many times we as locksmiths go out to generate keys for cars. In most cases the lock cylinder will have the code on it (glove box, passenger door, trunk lock, or ignition). Then there comes the time when the O.E.M. cylinder has been changed, and there is no code on the replacement cylinder.

If you do a lot of work and you run into this quite a bit like I do—simply buy an electric engraver, and engrave the code on the lock cylinder with it ***(see figure 10).*** These engravers can be found almost anywhere. Harbor Freight, E-Bay or the flea market often have them for under $15.00.

This will help you if you run into that vehicle again, or possibly help another locksmith.

I'm quite sure we all know the benefit of working behind a competent locksmith, or even yourself. This works for me, and will work for you.

Jonathan Muhammad
Georgia

Figure 10.

KIA Sportage Key Substitute

As most of us have experienced in the field, or at the shop, I unexpectedly discovered that there was something new on the market.

A customer drove up to the shop in a brand new Kia Sportage and needed some copies made of the ignition/door key. After a complete search of our keyboard, I realized we did not have one. So, as many of us have in the past, I improvised. I found that an Ilco X198/B74 is long enough, and even though the millings allow the blank to pass the keyway, I had to modify the blank as shown in ***figure 11.***

I rounded the head of the key as shown and cut the blade from the head to the shoulder stop to narrow the blade enough to fit in the ignition. After this was completed I cut the keys on the modified blank and got the customer on their way.

After they left, I found that the new Sportage uses an ILCO X267/KK4 blank. I ordered a box to be ready for my next customer.

Lowell Chalk
Florida

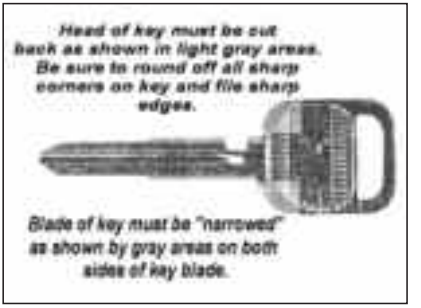
Head of key must be cut back as shown in light gray areas. Be sure to round off all sharp corners on key and file sharp edges.
Blade of key must be "narrowed" as shown by gray areas on both sides of key blade.

Figure 11.

Ford Ignition Trick

Replacing defective Ford ignitions is one of the more common locksmith automotive jobs. To remove the old ignition it has to be turned to "ON" which turns on many electrical functions. Rather than disconnecting the battery I carry a Ford plug without tumblers or housing. When the defective one is removed I use the plug to engage the "T-slot" and turn "OFF" the electronics in the vehicle that come on when the ignition is in the "ON" position. Simple answer to a common problem.

Mike Spencer
Canada

Removing Plug From GM Glove Box Lock To Decode

This tip applies to a certain type of glove box lock found on several GM models from approximately 1957–1966. The lock is characterized by a plain keyway that pushes in (when unlocked) to unlatch the door. Unlike the more typical GM glove box lock, there is no poke hole in the housing to remove the plug.

First, the lock needs to be picked clockwise to the unlocked position. This leaves the keyhole horizontal and pointing to 9 o'clock. There is a small tab in a cutout at the top rear that is accessed by pulling back on the hook-shaped latch. ***(See figure 12.)*** This tab must

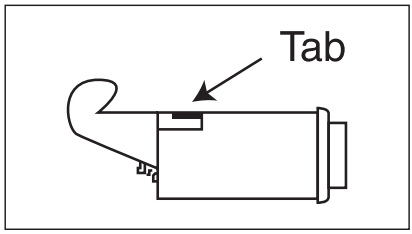

Figure 12.

be moved to the rear about 1/8", allowing the plug to rotate another 90°, by picking, until the keyhole is pointing straight up. At this point, the plug can be removed.

The plug should have a code on it. If not, there will be 5 wafers allowing you to cut the last 5 cuts on a blank and then progress the first cut to match the doors and trunk.

Jim Troeller
California

VATS Interrogation Tip

Have you ever had to interrogate a VATS ignition switch?

Do you start at "2" (1 was only used in 1986) and go through to "15"? Or, do you start in the middle and go 8, 9, 10, 11, etc.?

Using the records of the VATS blanks that we order, I did a little research and determined what VATS blanks we not only used the most of, but the frequency with which we used them.

I'm not claiming this is scientific by any means, but it does work for us and it seems to speed up the interrogation process for us. Based on our purchase records and other

information, here are our most commonly used VATS keys and their order (from left to right) of frequency.

13, 9, 14, 8, 11, 7, 10, 15, 3, 2, 12, 4, 5, 6

Of course, you may want to develop your own chart. Regardless, you will find that knowing your most frequently used keys speeds up working on these ignitions and saves you money.

Randy Birr
Oklahoma

Shroud removal on a Saturn

I used to have trouble finding a socket to remove the screws on the Saturn shrouds, until I discovered an easy method. Better yet, it's a tool that every locksmith already possesses. It's a .395 diameter following tool that is slotted at one end. The slot fits over the hex-headed screw perfectly. If they don't twist out by hand, clamp on a pair of vise grips.

Furthermore, if you need to remove the ignition lock, here is another tip. After removing the shroud, remove the lock bezel. A medium, flat tipped screwdriver is used with a twisting action as you work around the backside of the bezel. Once it is off, you can now see the top of the housing of the lock where the retainer is located. By prying under both ends of the retainer, first with a jeweler's screwdriver then with an ice pick, you can pull the retainer out. This is a newer GM style lock. If you're lucky, the spring steel tab won't break and you can reuse the lock after repairing it.

My customer was very happy that I could not only remove her stuck key (was cut on the wrong blank at 99 cent store), but also saved her the cost of a new ignition lock.

Steve Zemba
California

Vibrating a Mercedes Ignition

I've found a new use for an old tool. Recently I was asked to open a trunk on a Buick Regal at a local church. Using my trusty R&D GM pick set has me in the trunk in short order.

After opening the trunk for the customer, the minister and I were talking when he told me about a problem he was having with his Mercedes. Sometimes the key would turn the ignition and sometimes it wouldn't. Yet, it worked the doors consistently with no problem.

I told him that his problem was far from unique because the four-track key was made of steel and the ignition wafers were made of brass. Since the ignition usually had more use than the doors, the ignition was worn and the key would not work as it should.

When I told him I could correct the problem, he told me that the Mercedes garage wanted to much to fix the car that he had been forced to let the car sit in the church parking lot until he had the money to repair it.

The first thing I did was decode his existing key, cut him a new one and found out that it didn't work! Next, figuring that the wafers were worn, I cut each cut slightly higher and tried that key. It didn't work either. I was ready to get the tools out to cut the face off the ignition to access the roll pin that holds the ignition in place, when I literally got a pain in the rear—I was sitting on my R&D pick which I had stuffed in my back pocket.

That gave me an idea.

I reinserted the key in the ignition, place the R&D vibrating pick tool against the ignition and turned it on. As the pick was vibrating, I put gentle turning pressure on the key and the ignition turned. I was able to remove the lock in the normal manner and replace it with a new one.

Since then, I have tried the same trick on other Mercedes ignitions, as well as door locks; it has worked every time.

Steven McCrider
South Carolina

Vats Ignition Wiring Trick

Typically when replacing a VATS ignition; the procedure is to tear down the column and remove the old ignition and wiring. Then it becomes necessary to fish the new VATS wire, which is attached to the new ignition through the column, and reconnect it. With this method the ignition can be replaced much faster without replacing the wiring, without damage, and without splicing the wires in any way.

Once the column is torn down and the ignition has been removed, but still is attached to the VATS wires, gently pry the ears off of the ignition and then carefully pry and slide the metal ring down and over the VATS wires.

There is a clear plastic cover over the VATS contact points. Simply pry this cover off, if it hasn't already popped off when the ears were removed. Now simply dislodge the contacts from their seats and repeat the procedure on the new VATS ignition and reinstall the existing wiring on the new ignition. Carefully replace the clear plastic cover and pop the ears back on, slide the metal ring into place and reinstall the ignition and reassemble the column as usual.

This may seem complicated, but it is a very simple task that once mastered will allow you to replace a VATS ignition in minutes. This is a real time saver. Also, there is less risk in damaging the wires by using this method than by trying to fish the wires through a tight column already crowded with other wiring. This method this will also leave you with a healthy supply of leftover VATS wires, which may be used for other repairs if, and when, needed.

Recently, I had a customer with a VATS Camaro whose key just stopped working. What actually happened was that the key turned the ignition just fine, but the car would start only occasionally. Diagnostics indicated that the wiring between the under dash connector and the ignition had become an open circuit, and would intermittently make contact with metal because of a partially severed wire.

The ignition was still operable and only the wiring needed to be replaced. I was able to tear down the column, replace the wiring with wiring I had salvaged by using the above tip, and reconnect it to his existing ignition. This solved the problem and the customer was pleased that he didn't have to pay for an expensive ignition in addition to all the labor.

For those who wish to try this method, I suggest practicing with and old VATS ignition. I have not tried this method with the ten cut VATS, only on the six cut, but I do believe it is workable for the ten cut VATS as well as a six cut.

Mike McGowen
Florida

GM Sidebar Tip

A customer brought me two door locks without keys or wafers in the locks. I combinated the cylinders and code-cut the keys. The keys would work one lock and would not work the other.

I checked the calibration of my code machine and cut a third key. That key would work one lock, but not the other.

I disassembled the lock that the keys would not operate and inserted the key in the plug. I noticed that the sidebar would not withdraw into the plug far enough to allow the plug to turn in the housing.

I used a piece of very fine sandpaper and with the key in the plug, lightly sanded the sidebar even with the outside of the plug. When I inserted the plug in the housing, the plug turned freely.

With the plug out of the housing, I removed the key and saw that the sidebar would protrude far enough to lock the plug securely in place.

Willie C. Dawson
Georgia

Trapped Taurus Key Removal

I was working on a 1997 Taurus (with the Ford 8-cut) and found much to my dismay, that my eyes were not as good for impressioning as they once were.

I decided to pull the door lock and cut the key by reading the wafers. I was using my HPC Punch machine, and after cutting a 5 cut in the second position, I tried the key in the lock, only to find that it was trapped and I couldn't remove it! No matter how I wiggled and jiggled the key, it simply would not come out of the plug.

I surmised that the 5-cut had a hook on it, and that is what was holding the key so firmly in the lock. I was almost ready to give up and resort to more serious and time-consuming removal methods when I had an idea.

I realized that the H75 blank allowed me enough room to insert the release tool from my Determinator kit, down along the key and release the trapped wafer! It worked like a charm and the key came right out.

Larry Kanzer
Pennsylvania

Transport Tip

A 1994 Transport van tailgate lock we had to work on would operate with the electric switch, but not with the key. I simply replaced the corroded tailgate lock with a new Strattec lock #701928. Then I found that the electric switch would no longer operate. I had to remove the panel once more to find the problem.

This can be a very difficult problem to diagnose, because when the linkage is connected the problem is hidden.

This lock comes with the traditional plug and housing, but there is also a sleeve that slips into the housing. A serrated pin is included to press into a hole to bond the housing and sleeve.

The pin is to be used for mechanical operation only. If the lock operates electrically, throw that pin away. The electric component has a small arm that protrudes outward to slip into this hole. If the pin is installed it blocks this arm and prevents electric operation.

Live and learn, right? Thought I'd pass this on.

Mike Spencer
Canada

Transponder Key Tip

I have found through experience, that most people who have a vehicle equipped with a transponder-based immobilizer system do not know, or understand what it is that they have. So I tell them.

Better yet, I show them. I keep one of those clear-headed Ford keys with the visible capsule near me. When I show and tell, I'll point out the windings and explain it is a little antenna, and that a two-way communication takes place between the car's computer and the key, to determine that the correct key is being used.

Seeing, is believing. I "show and tell" people even when they don't ask, or whether or not I am even working on their car. The subject just seems to crop up on occasion.

Keeping one of these keys handy is a little thing that I do to try to educate the public, and to plant my little seed. It seems those who do know that they

have a "special key" have been told the dealer is their only option for keys. By showing them my demo key, I enlighten them whenever I have a chance.

Robert Pulley, CPL
Illinois

Tricky Decoding Trick

The other day I had to decode two keys: a Toyota TR47 and a Chrysler 8-cut. Trouble was, I did not have a gauge to decode them with.

To decode the Toyota TR47, I discovered that I could use the GM 10-cut without problems, as the depths and spaces are the same.

To decode the Chrysler 8-cut I used the old Ford double-sided codes and just ignored the #5 depth.

Using the codes worked like a charm and solved an immediate problem for me. Hope it helps someone else.

Robert Lazich
Wisconsin

Roll Pin Removal Tool

Over the years I've found that getting those pesky roll pins out of automotive ignition locks has often been a chore. Well, no longer!

I used an ice pick, ground off the end to a 90° angle with a fine grinding wheel, so that the edge of the flat is very sharp. ***(See figure 13.)*** This tool works great for driving the solid roll pins out of the lock housing.

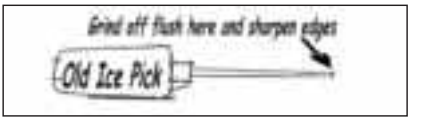

Figure 13.

The hollow roll pins are a little more difficult, but the sharp edges of the flat of the ground off portion, bite well into the edges of the roll pin to grip it when driving it out of the housing. A fine whetstone keeps the edge on the tool.

I carry three of these roll pin removal tools in my van. Each one is broken off at a different thickness along the blade so that I have a tool that will extract virtually any size roll pin.

J. W. Ritchie
Texas

Clothes Pin VATS Reader

Being a beginning locksmith, I need to find the least expensive way to do a professional job. Reading VATS keys with an ohm meter can be frustrating to someone with not-so-steady hands. I have made a simple device that greatly eases that frustration.

I use a spring-type clothes pin. Just behind the front of the clip and the spring pivot I drilled a 1/8" hole at a 45° angle. ***(See figure 14.)*** After removing the probes from my multimeter, I fed the wires though those holes and attached a male spade connector, which I bend at a 45° angle.

I then pulled the connectors back to meet the front of the clip.

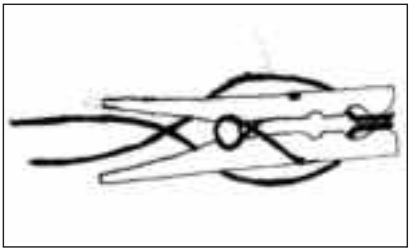

Figure 14.

After some fine-tuning, I glue these in place.

Now I can clip this device to my unknown VATS key, turn on my multimeter and determine the resistance.

If you make one of these for yourself, always keep some sort of non-conductive material between the jaws.

Grant Marcelain
Wisconsin

Revealing a Hidden Code

A customer called with a lost key complaint. When I got there I checked my Fast Facts book to locate the code for the vehicle. Fast Facts indicated that the code for the customer's car was on the passenger door lock.

Initially after pulling the lock, the only thing I found was a cylinder corroded with grim and weathering. I figured if there were a code beneath all the corrosion, I would probably damage it. I tried to scratch the corrosion off the cylinder.

I found that a Scotch Brite® scouring pad (#07447) will clean off all the dirt, grime and weathering and reveal the code without damaging the cylinder.

These pads are available from most grocery or auto body supply stores. They are 6" x 9" and one pad will clean a lot of cylinders. Since the pads are abrasive, I found that other cleaners, abrasives or oils are not needed to enhance the cleaning action of the pads.

Sure makes finding a code on a corroded cylinder much easier.

Frank Kitchen
Indiana

Automotive Picking Tips

Generally, I find that I can pick Ford 10-cuts, most Honda/Acura, most Nissans, and Subaru with a DA-25 keyway.

Recently I have run into some Honda's that would not pick as easily as they had in the past and the lock felt different.

What I discovered was that the owners of these vehicles seldom used their keys to unlock the cars. They always used their remotes. This caused the wafers in the locks to freeze up and not respond well to my picking efforts.

To resolve the problem, I used an uncut blank and ran it in and out of the keyway several times before trying to pick the cylinder. If that doesn't work, a little lubricant in the keyway along with the exercise of the uncut blank will usually solve the problem for me.

On many Nissans I have much better success by picking the

cylinder counter-clockwise (which is the unlocked position on the passenger doors).

Before attempting to pick any of these locks, check your opening manuals to see what the recommended direction is for picking.

Adrian Slater
Virginia

Trunk Emblems and Strike Plates

If you have to remove a trunk emblem to service the lock and don't want to buy a new special pop rivet gun to put the trunk emblems back on; all you have to do is make a spacer bushing and use a regular pop rivet gun.

Make the bushing out of 1/4" thick stock (I used aluminum) 1/4" long and drill a .130" hole through it. When you need to use it, all you have to do is slide the spacer on the backside (over the shaft of the rivet and against the head of the rivet gun) of the rivet and then put the rivet into the rivet gun. It acts as an extension so the rivet will go all the way into the recess of the emblem.

If you've ever had trouble locating a strike plate where someone else has messed it up, and you have to correct the alignment, here's an easy way to do it. Put double stick tape on the backside of the plate and press it onto the doorframe. Check to make sure the deadlatch or deadbolt is not binding.

Just pull the strike off and move it until it is where you want it and mark the frame for the new location. Re-chisel the doorframe if necessary and attach the strike with the proper screws.

The tape will allow you to keep moving the plate and hold it on the frame till you get it exactly where you need it, and you don't have to put any extra screw holes to hold it or go crazy with it moving on you.

Terry Bradshaw
Florida

Frameless Window Car Opening Tip

With the newer, and ever more popular frameless windows on cars today, trying to wedge the window to insert an opening tool poses increased risks of window breakage.

The use of a wedge exerts pressure along a very narrow point of the window edge and sharply increases the danger of a broken window.

A method I now use, and feel is much less apt to break a window, is to employ the use of an auto dent puller. The kind that is essentially a large suction cup. These pullers are readily available at the auto parts stores for around $3.

By applying the dent puller to the back upper area of the window, and pulling gently, It allows the insertion of a hold open wedge. The wedge should

be at least two to three inches wide, made of hard rubber with the top and bottom edges thinned down slightly with no sharp corners. Of course, I never wedge the window open wider than necessary and use flat opening tools whenever possible.

Not only does this tool reduce the risk of breaking the window; it also allows me to put enough downward pressure (very, very gentle pressure) to pull the window low enough to allow tool entry.

Do Not Force It!

C. W. Bovender
North Carolina

LeMan's Door Lock Trick

A customer brought in the lock from a 1989 LeMan's and wanted me to make a key for it. Like others that I have done, the wafers were severely corroded from non-use and no lubrication, and were stuck tightly in their chambers.

My solution to the problem is to saturate the plug and wafers with WD-40 and after allowing it to work for a bit, I force the wafers out of the plug with a small screwdriver. Occasionally, I have to enlist the help of a small hammer to accomplish this task.

Once I have them all loosened sufficiently, I take one wafer at a time and rub them against an 8" Bastard Cut file. I hold the wafers of either side and gently rub them against the file until the corrosion is removed and the wafer is again showing it really is made of brass!

After cleaning each wafer, I put them back in the plug and remove the next one and repeat the cleaning process. You have to be careful with the cleaned wafers, as they will now easily fall out of the chamber.

When it came to making the key, my *TNL* software gave me the three missing cuts without having to progression.

This trick, used on other corroded locks has saved me from having to buy obscure wafer kits that I would seldom have need for.

David Craig
Illinois

Roll Pin Stabilizer Trick

Many times it is necessary to remove roll pins from a lock to properly service that lock. As is the case with many foreign ignitions.

Such pin removal often means drilling a hole next to the roll pin and then prying, or lifting, the roll pin up, and out of the housing surrounding the ignition. Unfortunately, the roll pins have a tendency to collapse when being pried, or punched, which makes them harder to remove and renders them unfit for reuse.

I always keep a couple of various sized paperclips handy so that when I work of one of these vehicles, I have a way to prevent the roll pins from collapsing.

Simply insert a paper clip into the roll pin before you try to pry or punch it out of the housing. The paper clip will keep the roll pin from collapsing when you put pressure on it, in you efforts to remove it.

Leonard Downing, CPL
Oregon

Notes

Homemade Numbering Fixture

Interchangeable steel typesets sold by some distributors, ***(see figure 15)*** are a great way to professionally mark key bows, particularly if the same alpha numeric word or code will appear on multiple keys:

The problem is, you need three hands to do this accurately; One to hold the key on the stamping block, a second to keep the type holder in position, and a third to strike it with a hammer.

To simplify and expedite the task, I made a simple fixture. It has a heavy steel base plate, a piece of angle with two spacers, a crossbar to accommodate the type holder and a small toggle clamp to hold the key in position. I believe the image is self-explanatory, ***(see figure 16.)***

Figure 15.

Figure 16.

This was made largely from scrap obtained from a local welding shop. The only critical dimension is the throat opening to accommodate the type holder. It should fit closely with perhaps .010" clearance all the way around.

The typesets are available with character sizes from 1/16" to 3/8". I found the 3/32" size to be optimum for key marking while replicating the OEM indicia found on many factory-cut keys. The 3/32" type holder will allow up to 12 characters in a space of about 1-1/8".

Peter P. Schifferli
New York

Broken Key Extraction

I went to a job for a broken key in an ignition. The key was broken off at the very tip. I could barley see the tip of the key and struggled for about 15 minutes pushing the wafers back to grab the key tip and extract. No luck!

I finally decided to put the longer portion of the broken key in the ignition. Then I worked my extractor in though the milling on the key far enough to reach the broken piece and pulled them out together.

Not only was it very helpful to have the other part of the broken key to aid in removal of the tip, it also simplified duplicating another key for the customer.

Pat Borchert
Colorado

Profile Cylinder Turning/Picking Tool

The tip in the August issue of Technitips on opening the profile cylinder prompted me to write.

For unlocking these cylinders, I use a piece of ESP flat spring steel that I ground down on both sides leaving about 1/4" above the ground down "neck" to form a paddle, ***(see figure 17).*** The narrow neck will work in most keyways, giving it an advantage over several specially cut keys. On single cylinders it acts like a snake pick does on Adams-Rite and Everest.

Cutting a "V" shape in the end of this tool provides a sharp fork that allows for grabbing pressure of those locks that have no slot for the paddle to fit into. In many cases you don't have to pick the lock first. A slight inward angle on the fork edge can help push obstructions like pins out of the way. It will navigate most basic profile keyways.

David Craig
Illinois

Figure 17.

Fast, Cheap Pinning Tray

When I took Foley-Belsaw's locksmith course, they sent a "pin tray" to accompany a pin tumbler lock lesson. The pin tray was actually a small piece of grooved black rubber mat, ***(see figure 18).*** The narrow grooves are the right size for holding pins and springs in place when servicing a lock.

One day while at a local hardware store, I noticed they sell

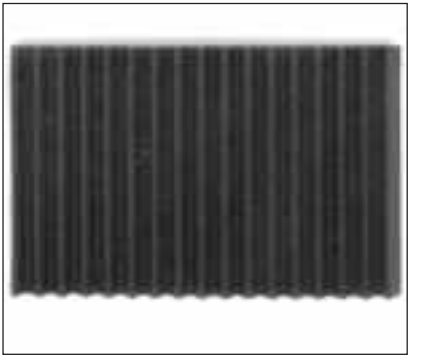

Figure 18.

the same matting by the foot; it comes in big two-foot wide rolls. (Home Depot sells a similar, lighter weight vinyl material by the foot in their carpet department.). Either kind cuts easily with a Stanley knife or heavy shears.

I have found this matting is perfect for lining toolboxes and shop drawers as well as placing on a portion of the workbench surface. It provides some cushioning and helps keep followers and other items from rolling around. And, of course, it is excellent as a "pin tray."

George Kenney
California

Metal Door Debris Catcher

Whenever I prep a hollow-metal, metal clad, steel, or iron gates, I always seem to have a lot of metal shavings all over the place. They are difficult to clean up (especially off of carpet) and invariably, I wind up with slivers in my fingers.

I found a really neat solution to the problem.

I bought a piece of 24" x 30" magnetic sign material. Before drilling, cutting, or otherwise working on these doors, I place the sign material (magnetic side up) on the floor under the door.

The magnetic material catches—and holds—all the metal shavings, drill debris and other filings that might drop from the holes I'm cutting.

To clean the "drop cloth", simply carry it to a trashcan or dumpster, brush the filings off, and every once-in-a-while give it a good hosing down.

Bob Roman
Maryland

Work Bench Tip

I think I have found the ultimate locksmiths work station for in the home, office, workshop or van.

I acquired these old steel typewriter desks, (General Fireproof Company.) and adapted one to be used for general locksmith work; while the other one is to be used for code work and interchangeable core cylinders.

These desks are a heavy-duty type with spacious drawers to hold all of my specialty tools and pinning kits. I installed heavy-duty casters on the legs, allowing us to move the desks for cleaning ***(see figure 19).***

Locksmiths can obtain these desks at used furniture company stores, or by want ads in local newspapers.

Figure 19.

Nobody uses these desks anymore for typewriters, and could be available for locksmiths use. I think any locksmith would be very happy with this type of a work station.

Peter Uram
Pennsylvania

Mortise Cylinder Turning Tools

I made a set of turning tools for mortise cylinders. Take a blank from whatever keyways that you encounter in the field and cut the blank to the deepest cuts, plus just a little more to clear the keyway.

When you have to pick open a mortise cylinder, Pick the lock and then insert the blank after you get it to turn a bit and this will give you extra torque to help retract the bolt or latch. This will also keep the top pins from dropping into the bottom of the keyway when you turn the plug past 6:00.

Frank Kitchen
Indiana

Editor's Note: Frank, I thought that's what screwdrivers were for! Actually, I've used the idea myself and can vouch for its effectiveness. Also, when you're removing a mortise cylinder and even after loosening the retaining screws and the cylinder won't turn, I use an uncut key blank inserted in the cylinder to help give me enough torque to spin the cylinder out.

Numbers Game

I use a PRO-LOK Blue Punch machine to cut most of the keys in my lock shop. Schlage is the standard on the campus where I work. I realized one day that I was having trouble reading the depth markings on the code bar. The numbers are stamped into a light gray steel bar. They are under a large handle and are often shadowed by my head when I am hunched over the machine trying to read the numbers.

I used a felt tip pen to fill in the numbers with black ink. I then lightly cleaned the ink off the surface of the steel with a paper towel and solvent. I now find the black numbers much easier to read. This makes using a fast punch machine even faster and less prone to error.

Bruce Setterlund
California

Dremel® Tool Cut-Off Wheels

I often use my Dremel® tool to adjust strike plates, install strike plates, cut down bars, cut screws, etc. I use either the thin cut-off wheels (Dremel® No. 409—packed 36 pieces to a vial) or the preferred thicker cut-off wheels (Dremel® No. 420—packed 20 pieces to a vial).

Sometimes I can't find the No. 420 cut-off wheels, so I am forced to purchase the No. 409's. These wheels constantly have trouble staying in the mandrel properly and break very easily. During a recent strike adjustment the mandrel was boring the center hole of my No. 409's and the mandrel would not

tighten to hold the cut-off wheel in place. Normally, I would purchase a new mandrel assuming the mandrel was worn out. I thought about how I prefer the thicker cut-off wheel and decided to try an experiment by tightening two of the thinner No. 409's into the mandrel at the same time. Presto, an instant and better then expected solution.

I recently installed an Adams Rite 4711 latch and used my Dremel® tool to cut down the aluminum frame to install the strike. I used only four of the No. 409 cut-off wheels during the installation, where in the past I have needed half a vial. Hope this helps someone out.

Jeffrey Hula
Virginia

Keybox Carrier Tip

If you don't have room for a key tower or pegboard walls in your service vehicle, I have a simple solution! If you don't have a few hundred dollars for those large key boxes that you can actually sit on, I have a simple solution!

All you need are some 2 x 3 or 2 x 4 zip lock type bags and those plastic car carriers for Matchbox/Hot Wheels type cars. Matchbox carrier boxes can hold 50–60 different key types and if you place them in the zip lock bags they won't get mixed up if the box is turned over.

I organize mine by the type, one box for residential/commercial, one for motorcycles and two others for just automotive. I use a permanent marker to put the blank numbers on the lid for easy identification. They don't take up much room and can stack or arrange like books for storage.

Frank Kitchen
Indiana

Let There Be Light

Third hands come in all shapes and sizes. I've found one that I'd like to share with you.

This little jewel is called "Nite Ize" and can be found in various auto parts stores, hardware stores and big box stores ***(see figure 20).*** If it does nothing else, it will keep your MAG® Silhouette flashlight where you can find it when you need it.

What I find is, that when I'm under the dashboard of a car working on the ignition, I can grip the Nite Ize between my teeth and direct the beam of light wherever it will do me the most

Figure 20.

good. And, if I drop it, the lanyard is around my neck so I don't have to get out from under the dash and hunt for a light that might otherwise have rolled under the seat.

As you can see by the illustration, the Nite Ize is designed to accept a MAG® Silhouette light, or a similar product and keep it close by hanging around your neck.

If you can't find one in your local area, call or write, NITE IZE INCORPORATED, 5735-E Arapahoe Ave., Boulder, CO 80303.

Dennis Harmon
Colorado

Pin/Wafer Reader Trick

I'd like to share an easy way to quickly figure out the tumbler sizes in a wafer or pin tumbler lock.

Simply make a set of depth keys with the depth number on them starting with a zero, or "1" depth (depending on the brand your dealing with) and moving progressively to the deepest depth in that series. Just make sure that you only cut one depth on each key. In other words the KW-1 would have one key with all number one cuts, a second key with all number two cuts and so on. Stamp each key with its respective depth.

In the examples in ***figure 21,*** I have shown (clockwise) a KW-1, a Y-11, a Y-13 and a SC-1. You

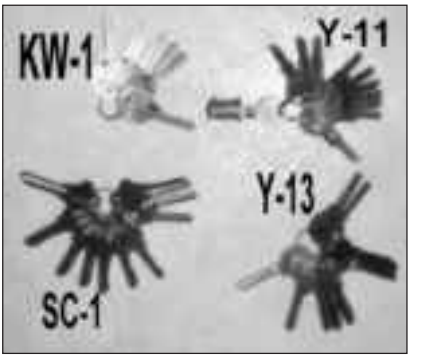

Figure 21.

can make your keys up using the most common keyways you deal with on a regular basis.

After shimming the cylinder and removing the plug, just insert the keys one-by-one and determine the depths in each chamber. Make note of the depths and code cut a key for that cylinder. I find this much easier then removing and measuring each pin or wafer.

Larry Bors
Oklahoma

Free Door Opening Tools

Every week I receive credit card and Office Max solicitations in the mail. Enclosed with these solicitations are credit card sized plastic cards. I have found that they are just the right gauge material to shim doors open, and they are more flexible than a standard credit card.

If the door has thick weather stripping or a 1/4" gap in the door, you can insert the card by the latch, then pull the door toward you and push on the card. The dead latch will fall into the strike plate hole and you simply

have to push on the card with more force for the door to open. If a little more tensile strength in the card is needed, you can slip another card on top of the already inserted card to force the latch back.

Dave Boemer
Coeur d'Alene

One-way Screw Remover Tip

My tip is from an accidental discovery that I have not yet seen as a previous entry in the tips section of *The National Locksmith* magazine. What a great magazine it is!

Anyway, here's my tip:

One-way, or security screws are being used in nearly all window locks (as well as other mechanisms) sold and installed by Australian locksmiths. To do their job properly, these screws are made to be difficult to remove without the aid of a special tool.

However, if you were to grind the cutting tip off of a quarter-inch drill bit so that the flukes of the drill are flat, you have taken the first step to making yourself a universal security screw remover.

With the cutting tip ground flat, the bit is transformed into the perfect shaped tool to put into a drill chuck and remove one way screws—after you set the drill in reverse of course.

The web of the drill tip, once flattened, fits perfectly into the head of the screw and being High Speed Steel, the bit is hard enough to bite in to the somewhat softer screw head. This is especially handy when removing old locks for replacement etc. I hope this tip can help somebody somewhere at least, and maybe they won't curse the fact that they just broke that new drill bit, but rather created a new and very handy tool.

Corry Glanville
Australia

Powerful Power Source

I bought a portable battery jumper kit (you know the kind with the cables and power supply that you plug in to charge up) and have found it to be a truly versatile and useful tool. My primary use of this device is for when I'm using my PRO-LOK 12-Volt Halogen inspection light. Mine has a cigarette lighter adapter with it.

The problem is that I could not get close enough to the car I was working on, if the light was plugged into my van, or I had trouble with the cord being underfoot.

Now, I simply hook my light up to my portable battery pack and unreel just enough cord to do the job. I have made a wire holder that keeps the cord out of my way. I simply used a grooved wedge to hold the light and an ordinary suction cup with a hook on it that holds the device to the window.

I have found the portable battery pack a real lifesaver. I've used it about twenty-five times so far to run my inspection light.

I've used it for short runs on other battery operated power tools as well.

Bob Roman
Maryland

Automatic Center Punch Improvement

I frequently use a spring-loaded center punch to loosen tight one-way security screws, but the hardened screws quickly flatten the point. Masonry nails are made of a very hard metal and I tried replacing the tip of the punch with a short masonry nail after giving it a quick sharpening on my grinding wheel.

I was surprised and happy to find that the nail was a drop-in replacement, requiring no modifications at all. You might need to grind the shaft of the nail a little smaller for some makes and models of punches, but I didn't need to do anything other than sharpen it, and the hardened nail stays sharp far longer than the original bit in the center punch.

Ted Swirsky
New Jersey

Brass Hammer Tip

I am amazed what some tool stores charge for a small brass hammer. Consequently, I make my own and here's how I do it and you can do it too.

Go to a local machine shop and buy a 2" piece of brass bar stock in a 3/4" or 1" diameter. I get this stock for less than a dollar. Drill a hole in the center of the bar stock (but not all the way through the stock) slightly smaller than the diameter of a useless, worn-out Phillips screwdriver shank. Cut off the tip of the screwdriver and drive it into the hole of the brass bar stock.

Your new brass locksmith hammer should have cost you less than $2.00.

Fred Gamble
Texas

Auto Center Punch

I sometimes have trouble reassembling auto locks with the reusable face caps. I run out of hands and fingers trying to keep the pressure against the shutter assembly while trying to re-stake the cap with a punch and hammer.

Not long ago, while trying for the third time to accomplish this task, I remembered that I had an automatic center punch within reach. I held the lock together with one hand and used the auto center punch to re-swage the tabs and hold the cap in place.

It works great!

Rick Clayton
Texas

Shim Tip

If you are out on a job and need a piece of shim stock real bad, here's a way to bail yourself out.

Check around and see if there is something that you have

recently purchased that has one of those little plastic anti-theft stickers on it. If so, carefully remove the sticker from the item that you bought and open the inner plastic cover. Inside you will find two perfect pieces of shim stock that are just the right size and thickness.

Glenn Kirkpatrick
Montana

Editor's Note: Glenn, I never thought about opening one of those devices. Thanks for the tip. Over the years I've had locksmiths suggest cut up soda cans, tin-foil and even a feeler gauge (you know the ones for checking the clearance on a sparkplug) and pieces of stiff plastic from "clamshell" packaging. Like everything else in this profession of ours, we have to do whatever we have to do to make something work right now!

Pipe Cleaner Trick

We all have gone out to do a key origination, and the plan was to impression the key. How many times has the plan been foiled by a dirty lock?

I've known some locksmiths who will flush the lock out, and comeback the next day only to find the residue still in the lock. That residue will prevent you from seeing the marks as clearly as you should when impressioning. My solution to the problem is to use pipe cleaners.

They're perfect for cleaning the cuts and allow you to clearly see the marks. The pipe cleaners really wipe the cuts crystal clear; leaving no residue behind. Pipe cleaners, are relatively cheap, you can get a bag for under a dollar. There are other remedies for a dirty lock, but this works very well for me, and will work for you, too.

Jonathan Muhammad
Georgia

Torx Tip

Being in the military and being used to modifying Uncle Sam's expensive toys to get them to work properly, I put my experience to work when I needed a long extension for a Torx bit; which I didn't have.

I modified my T-20 bit with my Dremel Tool®. ***(See figure 22.)*** I cut a slot in the butt end of the bit that was wide enough to accept the blade of a flat bladed screwdriver.

Figure 22.

Now I simply insert the bit, reach down with my long screwdriver and twist.

This has worked so well for me that I have modified all of my Torx bits just in case I need them.

Bruce Horne
Florida

Trim Jig Tip

I have enclosed the pictures of a clamp that I have redesigned to hold the exterior trim of an exit device on a door until I can secure it with screws.

If you will notice it is offset so that it will work with vertical rod or rim devices and you have plenty of room to start the screws in the head of the device. ***(See figure 23.)*** This also worked great on the 10 exit devices with proximity locks that I had to install alone.

The unit consists of:

One "Jorgensen" E-Z HOLD II bar clamp 23" long.

One piece of 1/2" O.D. square tubing 36" long.

Two pieces of 1 1/2" x 1 3/4" x 3/16" flat steel.

Figure 23.

Figure 24.

Two extra pads for Jorgensen clamps.

The total length of the clamp is 13" the offset is 2" long and it is 4" deep.

The tailpiece of these clamps are spring steel, so I cut the tailpiece a 6" above the bend and welded the 13" bar to this. ***(See figure 24.)*** When welding, just tack the bar, as it will need to be bent so that it will be square to the door. When it is square, finish the welding.

Al Ernst
Minnesota

Perfect Pin Selector

As an institutional locksmith, sometimes I have to key several cylinders or cores to the same key. I use the new Glad Press and Seal plastic wrap and cover the pin tray sealing all the bins. I then cut out openings for only the pins I will be using.

Having the other bins covered helps to select the proper pins, eliminates the possible cross contamination of other pins

when accidentally dropping pins, and prevents over spills when refilling the pin bins. It can also be a good teaching tool for new locksmiths. This is useful when using original pins and they all are the same color.

Al Jacobson
Wisconsin

Torx Tool Trick

I do not know if this tip has ever come to you guys, but I had to tear down a 1999 Dodge Ram 1500 steering column recently. To my surprise I did not have a #20 Torx driver long enough to reach the screws, so I took my Dremel and made a slot in the butt end of my #20 Torx bit. I then used a 3/16 craftsman flat screwdriver, inserted in the slot to turn the Torx screw.

It worked out perfectly! I hope this tip helps someone as it has helped me.

Bruce Horne
Florida

Puttin' It In The Bag

When rekeying a commercial building or residence I prefer taking all of the cylinders to the van at once, rather than making several trips. The problem has always been how to carry all of the cylinders.

I have tried various methods. I don't like metal or plastic tool boxes because they are big and noisy and the plastic ones never seem to last very long. While walking through the local home center recently, I found some mechanics tool bags. They are the heavy canvas bags with lots of pockets. I also found a small one that was advertised as a kid's tool bag called the Gatemouth, Junior.

It is made of the same heavy material as the larger ones but measures approximately 7" x 9" and is 7" tall. As the name implies the top opening is very large. It is perfect for carrying a few screwdrivers, etc. and has plenty of space for several knob, deadbolt, or mortise cylinders.

It has five pockets on the outside that I use it to carry my cell phone, notepad, pen and a stack of business cards. The canvas material is quiet (no rattle, clang and bang) and very durable. It works so well that I bought another one to use as a lockout kit. I carry my picks, plug spinner, flashlight and anything else I think I might need in it. No more stuffing my pockets with lock cylinders or tools!

Mike Neely
Iowa

Transferable Key Boxes

I often have to change, or put down vehicles for repair and maintenance purposes. Since I am unable to afford to have two of everything and moving large key racks or boards from truck-to-truck is impractical, I've devised the following key boxes which make transferring large

numbers of keys from one truck to another easier. Of course, this solution takes all the fun out of not having the right keys, at the right place at the right time!

These key board/boxes have served me well for three years. A 4' x 8' sheet of 3/8" plywood is enough to make 8 boxes 1' x 2'. I use three boxes, one for domestic cars, and SC-l, KW-l, KW-l0, and WR5's, another one for foreign cars and the third for motorcycles, transponders and high security blanks. To maximize space I do not buy plastic heads except for the transponder and VATS keys.

For hooks, 1-3/4" x 6/32 screws work best. 1-1/2" x 6/32 will do. Each double-sided box has 63 screw/pegs for a holding capacity of 126 different blanks and each peg will hold 10 non-plastic head keys, for a total capacity of 1,260 blanks. My keys are arranged alphabetically by manufacturer, then by number, and I still have room for expansion.

One screw, two washers, one lock washer, one nut and one wing nut per peg, means each box costs about $30.00 in materials. Vibrations during driving require keeping the wing nuts tight by tightening them periodically.

My foreign car key box and my domestic key box are mounted one each on a back door of my van. ***(See figure 25.)*** An L-bracket made out of two pieces of 1' long 2 x 4 supports the weight. Three self-tapping 1-1/2" sheet metal screws with washers hold the top of the box to the door and two 3" drywall screws secure the bottom to the L-bracket.

Figure 25.

When it's necessary to switch vehicles, I pull 5 screws, transfer the box to the other vehicle and go. This ensures that I do not have to go home for keys for the other calls I get when I'm out in the field.

David Craig
Illinois

Crochet Hook to Clip Tool Trick

After receiving a call late in the afternoon to make a door key for a 1994 Buick Century, I, by accident, discovered a "tool" of sorts that helped me out of a bad situation.

I tried all of the normal key making methods first—the problem

was the lock, not the keys! I removed the door panel from the inside of the door to access the cylinder; which turned out to be a bad move for me!

The interior panel had so much stuff in the way it was impossible to get close to the lock. I used my door wedges to gain some room between the glass and the top edge of the door, inserted a door inspection light, and used my "tool" to remove the horseshoe-shaped retaining clip holding the cylinder.

After servicing the lock, I faced the problem of putting it back in the door again. After a couple of tries, I finally got it back onto the lock and used my new "tool" and a screwdriver to snap the clip back into place.

The "tool" is an old crochet hook I had found a long time back and decided it might be useful someday. It is about 6" long, with a small slot in the side, and made of spring steel. I formed a double offset bend in it to aid in positioning the clip to the lock. I hooked the clip in the slot of the crochet hook and put it in place and used a long skinny regular screwdriver to push the clip in place and finally all done!

I know there are some tools on the market that perform this very task but when you don't have one, and it is getting dark, you use what's available to get the job done.

Jim Heffner
North Carolina

Drift Pin Driver

I was working on a Chrysler ignition and could not get the drift pin started and driven into place. I then put the pin into the cup that goes onto the switch and used a carpenter's nail set to fit over the end of the drift pin and gently tapped the nail set until I got the pin started.

Then I mounted the cup over the switch and used the nail set to continue seating it. I also used the nail set to hold the steel ball in place on a Ford 8-cut ignition when reassembling it.

I am sure there are other uses for this handy little tool in our daily operations.

Wayne Gow
North Carolina

More Effective Across the Car Tool

Here is a technique that I use frequently when opening cars with my "Across The Car" long-reach tool.

As shown in ***figure 26,*** I tie a strong cord to the business end of my tool. It allows me to manipulate the tip and zero in on a lock button, door handle, or

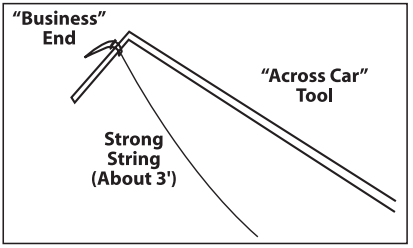

Figure 26.

locking switch much easier than trying to do it without the guidance the cord provides.

I use the cord to apply more pressure to the end of the tool for pushing door lock switches and grabbing door handles. With the cord, I can also "loop" it around vertical buttons and grab door handles as well.

William A Bishoff
Wisconsin

Three for One Car Opening Wedge

Virtually any hardware store that sells wood chopping or splitting equipment has large (3-1/2" x 10") heavy-duty, plastic wedges that are used to split logs. One of these wedges will make you three heavy-duty car-opening wedges.

Simply use a table saw to cut the wedge into three 1" strips. The wedges are strong, durable and in a bright orange color, easy to spot when you need one. Also, since it is longer than the average auto-opening wedge, it gives you more flexibility when it comes to how wide you want to make your opening (within reason, of course).

Thomas B. Suddath
Washington

Make Your Own High-Security Lock Pick

A few years back I was given a VW 2-track door handle to rekey. I noticed that if you place a 2-track VW depth key cut to 11-11-11-11 in the plug, it will raise all the slides to the highest position. In other words they will all be above the shear line. With the exception of the #1 slides which will be at the shear line.

Now, if you apply a counter-clockwise tension to the plug and pull out the depth key all the slides will remain at their highest position (as long as you maintain a binding pressure on the plug), just like when the depth key was in. If you slowly start releasing that counter-clockwise tension you will hear the slides start clicking down. If you do this very carefully, they should only drop down to the shear line—provided you keep a bit of that counter-clockwise tension on the plug. All the slides should eventually stop at the shear line and the plug will now turn…to the locked position. Bearing in mind you now have a lock turning to the locked direction and it must be flipped over to unlock the car.

With this discovery I went about making a picking tool for these locks. I started off by making the turning tool first. ***(See figure 27.)*** It is simply two pieces of steel strapping (the kind that wooden crates normally come wrapped in) that have been pop riveted together. I then bend them into shape and file them so that each tooth was exactly 3mm wide (which is the exact size of the keyway in the lock). This tool should fit quite securely into the keyhole and provide the required tension to pick the lock.

Figure 27.

Figure 28.

The next thing is to make the pick. I used a Silca HU66 blank and cut it down to 11-11-11-11. I then cut off the head of the key so that I was left with just the blade. ***(See figure 28.)*** Note that the shoulder of the key must be filed down slightly so that when the key is in the lock the turning tool can still fit. If you don't file down the shoulder slightly there will be no room for the turning tool.

Okay, so now you have a key blade with no head. What I did was use a 10mm ordinary bolt about 100mm long, with a notch filed in it. ***(See figure 29.)*** I drilled a hole in the key blade and the bolt and attached the two together by means of a 3mm machine screw. So now you have a turning tool and pick.

Figure 29.

Figure 30.

My last problem to overcome was a tool to successfully flip the picked lock back to the unlocked position. For this I just modified a standard plug spinner. ***(See figure 30.)*** I removed the blade and then filed down a piece of steel to fit securely in the keyway of the cylinder when it is ready to be flipped. The size of the bar should be 3.5mm wide and 11mm high. This bar is then screwed on to the plug spinner.

These locks pick quite easily when the action of the slides and springs are slowed down slightly. To do this you must introduce heavy grease into the lock that will slow down the slides—but not stop them from moving. I am unfamiliar with American lubrication products, but the grease I use is Castrol LM grease. It seems to work really well for

me, but you will have to experiment with whatever works for you.

The lock is now ready to be picked. Place the pick all the way into the lock as you would a normal key. Now place the tension wrench in the lock and apply the necessary counter-clockwise tension to bind the slides. Pull out the pick but keep an even tension on the lock. Slowly start releasing the tension and you will hear the slides drop down. As you hear (and feel) them drop keep testing to see if the lock will turn to the locked position. After a few clicks the lock will turn. If the lock hasn't opened then start over again and try with varying degrees of tension. The more you experiment the more proficient you will become. When the lock is picked it is just a matter of inserting the plug spinner and flipping the lock to the unlock position. Easy!

The exact same method can be done to make a tool for the BMWs. VWs and Audis. Audis are normally tougher than BMWs, but you will be amazed at how fast this simple tool opens the BMW's. The BMW pick is made in the same way as the VW pick. Cut all the spaces on a blank key to all 1's to raise all the slides above shear line. I haven't had the opportunity yet to try this tool on the Mercedes 2 track and Volvo's etc., but I feel sure that the same principle will apply. Also, bear in mind that in South

Figure 31.

Africa we have right hand drive vehicles so the directions to pick the locks may vary.

Finally, ***figure 31*** shows the complete set of picks and tools that I made or modified to accomplish this task.

Ed Gorgulho
South Africa

Editor's Note: Ed, thanks for the tip. For those of you who don't want the hassle of making your own BMW, VW pick, Lockmasters sells a flip pick for these cars. If you do want to follow Ed's suggestion and make your own, you will need a really heavy-duty plug spinner to flip the plug to the unlocked position on these cars. That tool is also available, separately, from Lockmasters. It is Part Number: RGN and sells for $125.00.

Tip for Faster Lock Servicing

When rekeying or servicing a lock or several locks, I found that customers appreciate the quality of the work first. Secondly, how quickly and efficiently the job was done. In many cases when rekeying or servicing a lock, putting on and taking off the locks take up a lot of time. Through my years of locksmithing I've noticed

locksmiths taking locks off with screwdrivers, which I believe takes to much time, and becomes strenuous. I've also noticed locks being taken off with cordless screw guns, which I believe, can sometimes strip the screws or the screw heads, not to mention the fact that it is often difficult to align the screw gun properly.

The way I've developed to take off locks is with an Electricians screwdriver, which can be found at most hardware stores. ***(See figure 32.)*** This screwdriver has a curved shaft and ball bearing at the bottom of the handle, which allows it to rotate, and spins using only a slight bit of wrist movement. With one of these screwdrivers (available almost anywhere electrician tools are sold) you can remove screws quickly, easily and look very professional doing it.

Christopher Pariseau
Arizona

Editor's Note: Christopher, several years ago, Dennis Harmon submitted a similar tip and I bought a set of these screwdrivers. I show them in my tips and tricks seminars and use them regularly on service calls. Great product. Thanks for mentioning them again!

Figure 32.

No-Slip Impressioning Pliers

Over the years that I have been in the locksmith business, I have tried a lot of tools for impressioning keys. I have made a number of them, but the pair shown in ***figure 33,*** give me the best results of any tool that I have made for this purpose.

I have tried the larger set of ViceGrip's and the smaller. I find the middle size to be the best. With the big set you get too much pressure and with

Figure 33.

the smaller set you can't get enough pressure.

To make the tool I take an old worn out flat file and break off about 2 to 3". I clamp the two of pieces in the ViceGrip's and I grind the front part of the broken file to the shape I want. Then I turn those two pieces around, and around, until I have all four sides the shape and smoothness that I want. After grinding and shaping, I place the two pieces face-to-face and clamp them and weld the file pieces to the ViceGrip.

This gives me a good, sturdy and economical set of impressioning pliers. Because of the large, flat, toothed file surface, I have never had a key slip in them and neither do they scar up the key blank.

Ben Marshall CPL
Florida

Homemade Button Grabber

Here's an easy way to make a Button Grabber opening tool (Loop Tool), from a five-gallon plastic pail. You should be able to find one almost anywhere.

Cut a strip all the way around the pail approximately 1/2" wide. Then cut the ring you now have and open it and straighten it out. Round off the ends, attach some string and a heavy rubber band and you have a Button Grabber that is approximately 34-1/2" long. ***(See figure 34.)*** That's long enough so that it should conveniently reach any button you're trying for.

Figure 34.

Larry Bors
Oklahoma

Hold That Light

After reading several tips on holding lights, I have found a new one. It is a strap-on, stick-on, clip-on light that's easy to make.

I use a Mini Mag. and a Steelman Bend a light pro. I bought the Nitelze Headband that had the belt clip that rotates with it. Then I went to a craft center and got a bag of Adams medium suction cups with hooks. I took the wire hook off, and the knob on the end of the cup fits in the large hole of the belt clip holder that will hold my Mag light or the Steelman. The suction cup does not get in the way if I want to use the belt clip in other ways.

I now have a way to hold two lights in different ways that take up no room hardly in my box.

William Cato, III
Arkansas

Ford 8-cut Trunk Spring Tip

When requested to rekey or service the 8-cut trunk lock for vehicles such as the 2002 Mustang or Grand Victoria, I find it sometimes frustrating to re-install the return spring in the back of the lock. If you've ever

dismantled one, you know that the spring comes out much easier than it goes back in.

I have designed a simple tool made from a hollow metal tube (5/16" O.D.) that allows me to re-install this spring in less than a minute.

The tube I used is from a Mas-Hamiltion X07 lock. The tube is .308" in diameter and works perfectly for this application. I assume that a similar tube is available from any hobby shop or hardware store. Just remember: size is important. If the tube is too large, the tube will not fit into the last coil of this tapered spring, and if it is too small, the spring will not clasp the tube and stay on. Also, the walls of the tube must be thin, so that the nipple at the end of the lock will slide into the tube easily.

The tool is simple to make. Use a warding file to file a square notch 1/16" deep into one side of the tube on either ends. ***(See figure 35.)*** To use the tool: place the lock in a vise so you have both hands free. Place the tailpiece on the inner end of the spring. Place the tube over the tailpiece and the notch over the spring wire end.

Hold this together and orient it over the back of the lock so that the notch side of the tube is opposite the cutout in the outer lock housing where the other end of the spring is to engage the lock.

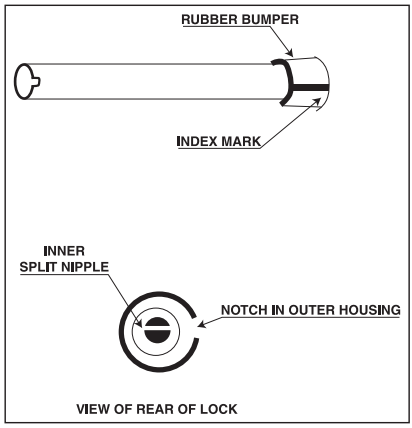

Figure 35.

Do not attempt to wind the spring at this point. The object here is to blindly push the spring straight into this housing and engage the spring into the cutout in the nipple at the back of the lock. This will stretch the spring and draw the other end of the spring into the housing.

With the other hand, use a pair of needle-nosed pliers and rotate the end of the spring closest to you clockwise about 1/4 turn, to the opening in the housing where it belongs. That should get the spring back in place for you.

It will take you a couple of times to get the feel of the tool, but it does work very well. I also suggest that you buy a small rubber bumper cover (like that which would go over a doorstop) to cover the other end of the tube and protect your hand and fingers when you are pushing the tube into a housing. I would also suggest marking the side of the tube in

line with the notch in order to help align the tube-spring-tailpiece and nipple.

Timothy S. Boyea
Wisconsin

Let There Be Light

I have found that as I grow older my eyesight is not quite what it used to be. I need a little help in the lighting department. I used to carry a Mini Maglight until last year when I came across the Stylus penlight in my local tool supplier's catalog.

It is made by Streamlight; the folks that make the powerful flashlights many police officers carry. The Stylus is not much bigger than an ink pen and clips nicely inside my shirt pocket. It is made of machined aluminum and is very sturdy.

The light has a button on the top that turns it on momentarily. A twist of the cap at the top will keep the light on until you twist it back to turn it off. I have found the light to be indispensable for reading code numbers, etc. It gives plenty of light.

Even though I have used it daily for nearly a year, I only recently had to replace the batteries. It uses AAAA Lithium batteries that I found at a local Menard's store. This is one tool I will never be without!

Mike Neely
Iowa

One Handed-Picking Tool

A year ago, I suffered a stroke that paralyzed my right arm and leg. I'm better now, but a few things are keeping me from returning to full time locksmithing. This meant that I had to invent ways of doing things that were once second nature to me. Since I have to work one-handed, I have learned to figure out new ways of doing the dozens of thing I used to easily.

You know what? I think I'm doing pretty well and my tip for my handicapped picking tool is just one example!

Usually, picking locks requires two hands, one for holding and turning the turning tool, and the other to pick the lock. Problems often arise when picking locks because the tension wrench gets in the way and the wrench tends to fall out because of the irregularities in the keyways.

My tool allows picking with one hand, keeps consistent pressure on the turning tool and keeps the turning tool out of the way of the pick! An added feature is this: there is no way for my turning tool to fall out of the keyway!

Figure 36, shows an SC1 blank cut down to the first (or bottom ward). From where the bow meets the blade of the blank, the blank is further cut down on an angle, removing most of the bow. The KW1 blank is similarly cut. Also shown is a hook pick and two SC1 keys.

Figure 36.

Figure 37.

Notice that in the modified blank bow is a 1/8" hole (1/8") drilled through the widest remaining portion of the bow. This hole allows for the insertion of a 12" long rod that acts as the turning tool. To make the tool work effectively, I use a piece of tape or a twist tie on one end of the rod (to keep the sinkers from slipping off) and then slide six 1/4 oz. fishing line sinkers on the rod.

Next, I place the rod in the modified key blank and place the key in the keyway. ***(See figure 37.)*** Now I'm ready to pick the lock. You can put the rod in the key from either direction depending on the direction you're picking the lock. From either side of the key the rod maintains consistent equal pressure on the plug, which aids in speeding up the picking process.

The SC1 or KW1 will work on most residential locks and some commercial locks. However, if you wish, you can use any key blank to make your own turning tool to accomplish the task.

David Fairbrother
Wisconsin

Editor's Note: Dave thanks for the tip and best wishes for a speedy recovery. For those of you who would rather order Dave's tool than make it yourself, send Dave a check or money order for $20 to: Dave Fairbrother, 7531 W. National Ave. Milwaukee, WI 53214. Phone: (414) 975-0580.

Improving On A Good Tool

I bought HPC's Door Jack and used it successfully before figuring out a way to make it what I consider an even better tool.

I used Foley-Belsaw's $6.95 Thrust Bearing Kit (Part #LHC5727751). The kit contains two bearings and four washers. I placed one washer over the shaft of the Door Jack, put one bearing on top of the washer and then put on the second washer before replacing the turn knob. ***(See figure 38.)***

Next, I reinforced the swivel (center part of the Door Jack), by welding a small (1/4" x 1/2")

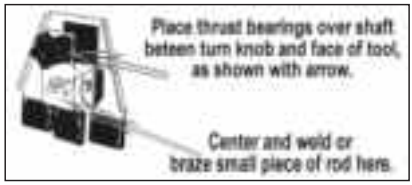
Place thrust bearings over shaft beteen turn knob and face of tool, as shown with arrow.
Center and weld or braze small piece of rod here.

Figure 38.

piece of threaded rod vertically where the big bend is on the swivel. This gives the tool added stability and strength.

The first time I used my modified tool, it turned so easily and worked so smoothly, I almost jacked the door out too far!

The Door Jack is one of the best tools that I own. My modification, I think, makes it even better.

Samuel Greb
Texas

Gas Cap Key Modification

I'm sure most of you are familiar with the universal gas cap keys (really a jiggle/pick key for wafer locks such as gas caps use) that sell for around five dollars.

I find them well worth the money and have been using mine to unlock security bars, desk locks, and cabinets with wafer locks for some time now.

I have made a spin-off version of that key that I use to pick pin tumbler locks. Using my version of the key, I often don't have to use a turning tool. I have so much success with this key that when I have to pick a pin tumbler lock; my pick key is the first one I reach for.

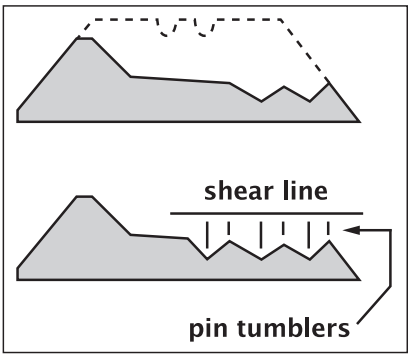

Figure 39.

As you can see in ***figure 39,*** I've taken the blade from a utility knife (be sure to grind the cutting edge down before trying to make this key) and grind it as shown in the illustration.

This key works very, very well and on most of the locks I have to pick.

Larry Bors
Oklahoma

Improved Bump Key Tip

In a past issue of *The National Locksmith*, there was a great article by Sal Dulcamaro on bump keys, so I made some. Later there was a Technitip submitted by Dennis Harmon's about using shrink tubing on the handles of bump keys, so I added that as well. While I was using these new bump keys I made one day, I needed to have the turning handle on the right side of the key instead of the left, so I came up with another bump key design.

My bump key set now consists of the following keys: KW1, KW10, Y1 and Y2, MD17 (DE6), M1, SC1 and SC4, WR5 and various lengths of turning tool handles.

To make my turning tool handles, I used an 8 x 32 threaded rod, 12-1/2" long and

cut it into three different lengths: 2-1/4" , 4-1/2" and 5-3/4" . I inserted nuts about 3/8" from one end of each piece (just long enough to insert through the key chain hole in a blank) put it through the blank and secured it with a small wing nut. The wing-nut makes it easier to get on and off.

The stationary nut is secured with Lock-Tite® to keep it from moving and then I place a piece of shrink tubing against the nut, from the long side of the handle. The Lock-Tite® and the shrink tubing keep the nut in place.

Now if I have to use one of my handles on the right side of the key, rather than on the left, all I have to do is remove the wing nut and switch the handle. Or, if I want to use a longer or shorter handle, it's simple to change sizes.

The handles, of course, act like turning tools. The longer one allows for more torque than the shorter one. The smallest one I use for padlocks on storage units and sheds where you have to hold the lock, bump key and whatever you use to hit the key. I use a screwdriver handle.

Rodger Long
Illinois

Flashlight Holding Jig

During those times that I need a third hand to hold a flashlight while opening cars at night, I have developed a flashlight holder, which attaches to the outside window on the opposite door from which I am working. The light shines through the vehicle and can be aimed on the inside of the door that I am working on. That is, I can aim the light on the door lock button while watching for movement, or I can aim the light on the manual/power door lock switch while using an inside access tool.

The materials needed to construct this jig can be found around the house. A couple of blocks of wood, a thin piece of plastic, screws, and a bracket (a broom holder type works well) to hold the flashlight is all that's required.

Figure 40, shows a side view of the jig and ***figure 41,*** shows the jig placed in a car door.

One block of wood should measure 10" long and 3" wide and be 5/8" thick. The second block of wood should measure 7" long, 2" wide and 1" thick. Making a slight taper on this second block of wood will help in directing the light down towards the lock buttons. By the way, these measurements are not critical.

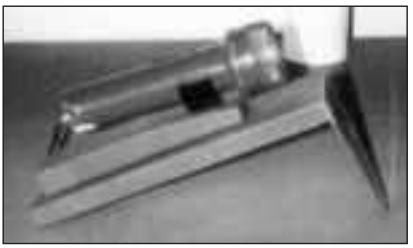

Figure 40.

Figure 41.

Mount the smaller block of wood on top of the larger with a screw, which should fit loosely. This will allow the top block of wood to swivel slightly to aid in aiming the light. Be sure to countersink all screw heads. Attach a small bracket to the top of the smaller block to hold the flashlight.

Next, cut and attach a V shaped piece of thin plastic on one end of the larger block as shown in the illustration. It is this plastic that is used to slide down between the window and the outside of the door and supports the flashlight holder.

Of course, the flashlight is clipped into the bracket and can be aimed or swiveled as desired.

Robert K. Booska
Vermont

Impressioning Tip

I had an idea for fabricating an impressioning tool from new Vise-Grips model 6LC. These

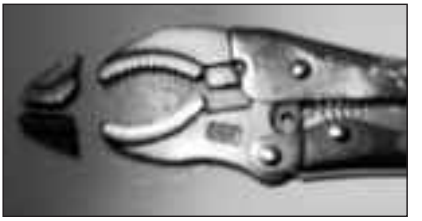

Figure 42.

Figure 43.

alligator tip Vise Grips work with any size key, from a large bow double-sided Chrysler to a small bow Y11.

Since the tool grabs the edges of the key, rather than the flat of the bow, there is no slipping with the up and down rocking motion used when impressioning. I cut approximately 1/2" to 5/8" ***(see figure 42)*** off the tips and then ground the top and the tips of the jaws down. ***(See figure 43).***

These modified Vise-Grips have made a welcome and useful addition to my toolbox. I'm sure this idea will work as well for others.

Mehdi Zahedi
Ohio

I Can See Clearly Now

I'm new at servicing cars and vans and it didn't take me too long to realize that I was taking way to long to get some vehicles open. Particularly those with

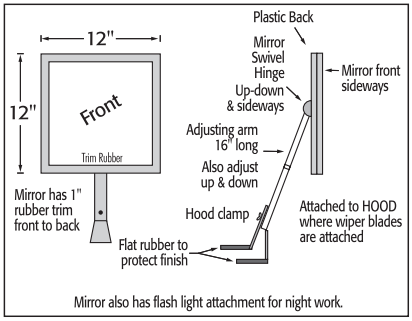

Figure 44.

heavy tint on the windows that hindered my view of the interior of the vehicle.

The problem was exaggerated at night when I tried to hold a flashlight in my mouth or asked the customer to help and then tried to get them to point the light where it would do me the most good. It was frustrating.

I finally came up with a way to stand beside the car, get an excellent view of the interior (day or night) and speed up the opening at the same time.

Figure 44, shows a device that I came up with to aid me in getting cars open much faster, as I could see the lock buttons or slides move when I had my opening tools in their proper position.

I found a 12" x 12" mirror and mounted it on an adjustable swivel arm. The arm adjusts side-to-side, as well as up and down. I can attach the mirror's arm to either the windshield wiper arm or to the lip of the hood. It takes only a moment to place the mirror and a second to adjust it to give me the view I want of the interior of the vehicle.

For nighttime use, I have another swivel mounted to the mirror that holds a flashlight. I can adjust the flashlight and mirror so that it directs the beam of the flashlight to the area of the interior where I need to see what's going on.

It took me about a week to find all the materials I need to assemble this device. But the effort was well worth the results.

Marty Coleman
Colorado

Making A Key Decoder

Several times on the forums I've seen locksmiths requesting information on key gauges (key decoders). For several years now, I have been making my own. The one that I have included with this tip is for a GM 10-cut, but they can be made for almost any type key.

I use a piece of plastic (white) about the size of a credit card. ***(See figure 45).***

Figure 45.

I make a tapered cutout in the middle of the card and make sure the bottom of the cut is straight. The cutout is approximately 1-3/4" long and approximately 3" wide, tapering it a width of 1/8".

Using clippers, depth keys, or a code machine, I make the proper depth cuts on an uncut blank. In the case of a double-sided key, I make the cuts on both sides of the key.

To mark the decoder, I put the key in the wide end of the slot and slide the #1 depth (or zero, as the case may be) down to where the key bottoms out on the flat portion of the gauge and the "cut" in the key is snug against the slopped portion of the gauge. Then, I mark that position with an indelible marker.

I continue with each depth until I have all the depths recorded on the new decoder. I find these decoders handy for measuring worn keys, and working with keys with seven to ten depths where sight-reading would be difficult.

Clarence "Sonny" White
Illinois

Editor's Note: Sonny, I did a few quickie measurements of the key you sent. Dead on, my friend. My only caution to any of my readers is to be sure that the code cut key is perpendicular in the gauge before you mark it. If you work over the edge of a table or bench, you can use a small square to make sure your keeping everything in line.

Cat's Eye Light Tip

Going on night calls, I find that "scene" lighting is hard to come by. I also find that the light from headlights in not effective, since I can rarely focus them on my work area and flashlights tend to get dropped and broken. And, with flashlights, the batteries tend to go out just when you need them the most.

One day while browsing through a bicycle shop, I found a set of "Cat's Eye" type headlights for use on bicycles.

These lights are available as either single or double sets and have a rechargeable Ni-Cad battery pack, shaped like a water bottle. They are designed to slip into the water bottle holder on a bike.

Although the initial cost ($75.00) is a bit high, you can save a lot of bucks on replacement battery costs.

Anyway, I bought a double set and then went to the local hardware store and purchased several different types of plastic squeeze clamps, which I drilled in various places to allow me to mount the light to it at any position I felt like.

I replaced the lamp mounting screws for the handlebar clamp with a similar screw with a knurled head so I can change the position on my squeeze clamp quickly and without tools. I also beveled the clamp's tips so that if I have to use it on a car door/window post; the

bevel will pull the clamp inward towards the glass.

Then I found an old flexible microphone mounting tube similar to Greenfield electric cable. I mounted the second light to the one end of the flexible tube and attached a plate magnet to the other end.

Now I can position one light with the clamp for general lighting and use the magnet and flexible tube mount on the car roof to shine the light directly down on my work area.

The battery pack is made of Polypropylene and will not scratch the car's surface.

I can also use the light "inside" a house when I need extra light for a residential installation.

Curt Fauerbach
Pennsylvania

Lost Screw Finder

I was working on the entrance door of an older model motor home, when I dropped one of the screws into the grass beneath my feet!

Of course, the screw was a specialty screw on which the actuator arm of the lock pivoted on.

After getting on my knees and searching for the screw for about twenty minutes, I thought about the magnetic tool bar over my workbench in my van. I went to the van, removed the tools from the bar, took the bar off the wall of my van and went back to the area where I had dropped the screw.

I held the 16" magnetic bar about an inch above the ground and moved it slowly back and forth around the area where I thought the screw might be. I found the screw in less than a minute!

I now keep a magnetic bar in my van, dedicated to screw retrieval.

The lock wasn't working because the "shouldered" screw that I dropped had loosened somewhat and the actuator arm was hanging up on the threads of the screw rather than riding on the shoulder.

Bob Nilles
South Dakota

Key Blank Storage Tip

After starting my own mobile company nine months ago, I quickly discovered I needed to carry a large quantity of different key blanks. In the past every van I have worked in had a pegboard and hooks for key storage, which made a lot of noise when driving down the road.

I used small plastic bins made by Arko to store keys. Each "nest" has 36 bins per cabinet. That works great for me, but I had a problem locating key blanks due to the number of drawers I had to search through.

To solve this problem I bought a $15.00 pocket organizer at Wal-Mart that has an electronic address book. Under the name section I enter the blank's ID number—for instance O1122A. Under the address location I enter the key blank location—for instance 2-2. That tells me that blank 0112A is in; Section 2. Row 2.

By entering in all my key blanks and their locations into the organizer, I can search for a specific key blank by entering any key ID name and hitting the search button. Presently, in my van, I have 12 cabinets consisting of 6 rows of 6 drawers. This allows me to store over 400 boxes of key blanks (over 2,0000 blanks) and know exactly where each one is with the stroke of a few keys on my pocket-sized organizer.

Greg Dunn
Indiana

KD-22 Conversion

Here's how to convert the Keedex KD-22 under the door tool for leversets, so it can be used to open doors with knobs.

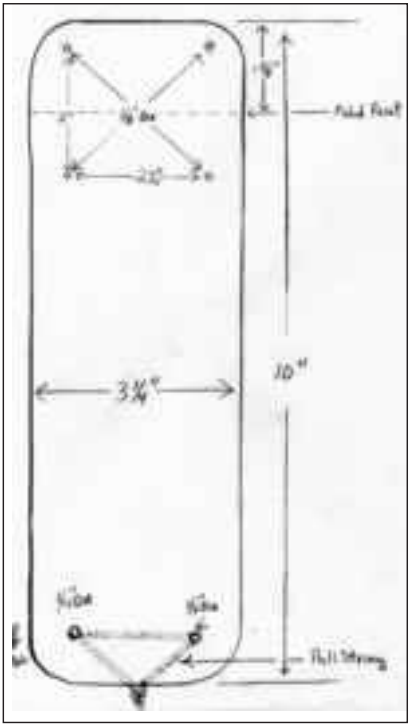

Figure 46.

Using the thin flexible plastic cover from and old three ring binder, I cut a 10" by 3-1/4 template and added several strategically placed holes. ***(See figure 46.)*** After the holes were in, I folded one end over the top of the tool and pop rivet it in place. ***(See figure 47.)***

To finish it up I then tied the pull string to the other end of the plastic, and added a 6" by 1-1/2" piece of double sided carpet tape to one side of the plastic.

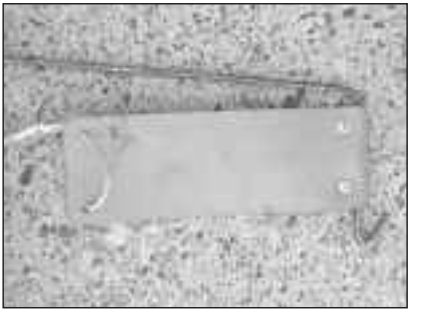

Figure 47.

Figure 48.

As with the lever tool, you just slide it up under the door, wrap the taped side of the plastic around the doorknob and then pull the string. ***(See figure 48.)*** I have used it many times with great success.

Jan Szalai
Wisconsin

Bump Key Tip Modification

In the October 2001 issue of *The National Locksmith* magazine, there was a lengthy article on bump keys by Sal Dulcamaro. I deal with quite a few commercial grade Schlage 6-pin mortise, knob, and lever locks where the keys have often been lost. I thought that the bump key procedure as described by Sal would be worth trying. I figured it couldn't be any worse than picking, drilling, shimming, cursing and muttering to myself.

After reading the article and playing with Sal's method, I found to my amazement that it works extremely well—with one minor modification. I used an 8-32 x 3" machine bolt, fastened it to the head of a cut key with a lock washer and nut. ***(See figure 49.)*** This gave me a permanently mounted turning wrench that doesn't fly off when you tap the key. I also placed some heat-shrink tubing over the end of the key.

As the article stated, I cut all six cuts one-quarter depth deeper (that is: a 9 becomes 9-1/4). I found that if I pull the key back two cuts, put turning pressure in the direction I want the key to turn, and ten tap the key, it seems to work best for me.

Figure 49.

I will say that although this process works very, very well, it doesn't work every time. However, it works well enough for me that bump keys are going to become an integral part of my tool arsenal.

Dennis Harmon
Colorado

Damaged Screw Removal Tip

The Craftsman Damaged Screw Remover (Model #52154) is available as a set of three removers with a pocket-sized case.

These tools are designed to remove Philips, slotted, Torx, Squared head screws and maybe a few others where a normal screwdriver will not grip due to damaged, or stripped heads. ***(See figure 50.)***

The remover sizes are #1, #2, #3 for screw sizes #6-#8, #8-#10, #10-#14 respectively.

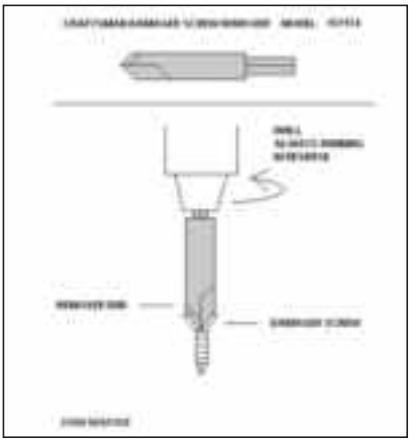

Figure 50.

I have had to use them several times and they are a welcome addition to my toolbox.

There are other versions available for bolts from Sears and also Lockmasters.

John Marske
California

Tool For Master Rekeyable Padlocks

The tool shown in ***figure 51,*** is what I use in place of hex wrenches when servicing Master padlocks.

Since I service a large number of these, I wanted a faster and easier way to remove the retaining screw on the Master rekeyables. I started with a PicQuic (Model #PQ88001) Multi-Driver and added optional hex bits #B11333 (3/32) and #B11376 (7/64). This will handle all Master rekeyables except the No. 29, which requires bit #B11396 (9/64).

I ground the shaft of the bits down a little to allow them to enter the padlock cavity easier.

Figure 51.

I assume these screwdrivers are available in the U.S. but if not, there are probably similar ones that will work as well. They are manufactured in Canada, but I'm sure they are exported to the U.S. as well.

Terry Heinricks
Canada

Follower Tip

I like to make my own followers, and it's easy to find the material to make them with. I go to my local hardware store, or hardware superstore, and purchase an aluminum rod the same thickness as the standard followers. These aluminum rods are about 3' in length and are usually very inexpensive. The length of these rods allows me to cut my followers to any desired length.

To make a hollowed out end for Arrow, Sargent or similar cylinders, I drill a small hole right in the center of the rod to the necessary depth and then increase the drill bit size until I get close to the size I need. To finish off the opening, I use a round file to open the hole until the Arrow and Arrow style plugs will slide into the follower easily. I also file the opposite end to accommodate mortise cylinders.

To modify this follower to allow for the dumping of master pins, I use a file to cut a ramp on one side of the follower that flattens out to a "table".

The best part about making my own followers is that I can make them as long, or as short, as I wish and can customize them for any particular special need that I might encounter.

Doug Greenberg
Pennsylvania

Deadbolt Drill Rig Tip

I have developed a jig to drill out the screws of a defective deadbolt. I made the jig from spare parts that I had laying around my shop.

I used an old Schlage deadbolt housing (you can use whatever brand, or brands are most popular in your area) and drilled the mounting holes all the way through the face from the back of the housing. ***(See figure 52.)*** I used an 1/8" drill bit so that I could drive 5/32 roll pins into the holes. These roll pins act as inserts to keep from wallowing out the soft metal in the housing when using the jig.

Then I removed the plug and dumped the pins and cap retainer. Next take the blanks that are most popular in your area and cut off the bows. Then epoxy the key to the end of the plugs, with an inch or so sticking out of the end of the plug. (***See figure 53.)***

Figure 52.

Figure 53.

Figure 54.

To use the jig, insert the proper plug into the shell, and lock into place with a couple of long top pins. Insert the plug into the housing, then slide the key blank into the defective deadbolt and drill, using a 3/32 bit, with the roll pins acting as hardened drill guides. ***(See figure 54.)***

Rod Springfield
Texas

Key Blank Tension Wrench

My most often used method of picking locks is raking. A problem I have is that I rake the tension wrench out of the plug and onto the ground into some dark crevice while a customer is watching.

I needed a better wrench, so I modified a couple of key blanks as shown. The KW1 fits the majority of the locks that I pick (Kwikset, Yale, Design House, etc.) and a SC-1 for Schlage and whatever else it might fit. ***(See figure 55.)***

The first couple of keys broke while bending them, so I used the flame from a lighter to heat them up before bending.

Next, file enough of the blade so that it does not interfere with the pick and make sure that the top part of the wrench is short enough that it doesn't touch the first pin in the lock. Also, on this top protrusion, I put a bevel on the bottom side so that the pick doesn't catch on it.

Since the wrench goes into the lock as far as it does, I never drop them anymore, and as a bonus, the wrench puts equal pressure on the top and bottom of the plug, making it much easier to pick.

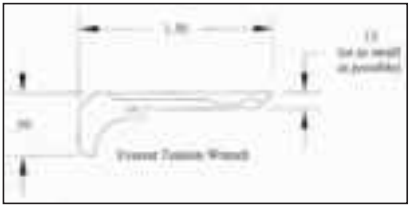

Figure 55.

The way I use the wrench is to grab hold of the knob that I need to open with my left hand, and with this tool in the lock, I use my thumb to put pressure on the wrench to turn down in a counter-clockwise direction or middle finger to turn up in a clockwise direction.

Jeff Jensen
South Dakota

Handy, Hand-Held Vise Tip

Here's how to make a small holding jig to allow you to hold almost any small pin, screw, part or piece that you need to stabilize to file, cut, polish or modify without cutting, burning or skinning your fingers.

I take an old hacksaw blade (actually almost any narrow, thin and hardened strip of metal will do), grind off the teeth and cut about 3" off either end. Then I shape the cut end of each piece and round it off to match the uncut end. ***(See figure 56.)***

Next, I rivet the two pieces together, through the holes that were already in each end of the blade and then drill a 1/4" hole through both pieces at the opposite end of the blade.

To use this hand-held vise, I simply insert a screw, pin or

Figure 56.

other small part in one of the 1/4" holes and squeeze the other leg of the holding jig against that part. The pressure is enough to hold whatever you need firmly in place while filing, grinding, polishing or modify the part is some manner.

Charles Brown
Missouri

Nifty Tension Tool

I have found that those binder clips that are used for clipping papers together can make an excellent tension wrench for wafer locks. The clips are obtainable almost anywhere stationary products are sold.

For smaller tension tools, I use a 3/4" binder clip and remove the tabs, or handles from the clip. Then use a pair of Vise-Grips to grip the legs of the tab, and use another pair of pliers to twist the short ends of the legs 90° as shown in ***figure 57.***

These have become my favorite tension tool. They're simple to make, economical and hold on like a bulldog!

Wade Bovender
North Carolina

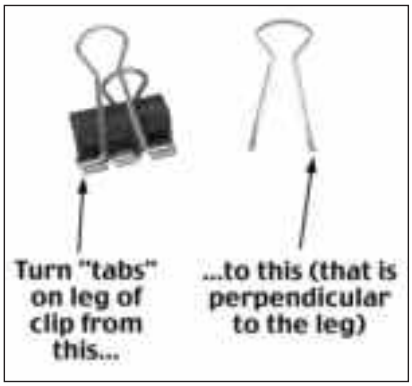

Figure 57.

Editor's Note: Wade, I got to fooling around with the sample you sent me and found that it does, indeed, make an excellent tension tool for small wafer locks. I also used it to pick a couple of double-sided Chicago cabinet locks that I had laying around. Then I got an idea and found a bigger binder clip and used the tabs on that to make a tension wrench with which I picked a Ford 10-cut. I haven't tried it, but I imagine that you could also use it to good advantage on Ford 8-cuts and other vehicles with the wider keyways. A-1 Security Manufacturing makes a similar tool (for those who do not want to make one like you did). It's called the Adjustable Tension Wrench (Part # AMF-24,) and is available from most distributors.

File and Tool Handle Tip

I had a box of files that did not have handles and found a way to make them for very little cost. Go to your local hardware store and purchase a 5/8" diameter wooden dowel and a length of plastic pipe which has an inside diameter of 5/8" and an outside diameter of about 7/8". The dowel should just fit inside the pipe.

Cut about 4" lengths of each and insert dowel in pipe. Drill a hole in the center of the end of the dowel and drive the file into the hole. This should secure the file and expand the

dowel slightly to hold it in the PVC pipe.

For flat tools, cut a thin slot into the end of the dowel and force the tool into the slot before forcing the dowel into the pipe. Try this with the flat Kwikset cylinder removal tool so many of us use. Even those tough cylinders will pop out much easier than before.

While at the hardware store, pick up some clear, flexible plastic tubing that just fits over the end of those inexpensive flat steel picks you never use because they are uncomfortable to hold. You'll like the feel of those too.

Ted Swirsky
New Jersey

Editor's Note: Ted, thanks for the tip. I remember one that I've used. Find some old golf balls and force the end of the file into the golf ball. The golf ball fits the palm of your hand well and keeps you from losing your grip on the file.

Notes

Padlock Modification

A customer had me order padlocks with an "M" profile Best key. When I ordered the padlocks I forgot to specify slide style capping. We do not have the tools to cap IC core cylinders! Needless to say the restocking charge made us look for a way out.

The company had purchased a small lathe some while ago and so we took an American padlock cylinder and mounted it to the sliding table of the lathe.

Figure 58.

The padlock body was shimmed to the appropriate height and an end mill cutter was chucked in the lathe head. A small setscrew was installed to keep the cylinder from chattering during the machining process. With this we were able to machine a 1/8" wide groove along the top of the cylinder where the caps would normally go. ***(See figure 58.)*** A slide from our Kaba kit completed the installation and it works like a charm. With a little bit of jig work the same principle could be used on a drill press.

Martin Brown
Ontario

Sesamee Lock Opening

I have been working on a new method to open Sesamee combination padlocks, and I believe that I have a technique that is somewhat better than other methods discussed to date. This Sesamee is made in Taiwan and is considerably tighter around the wheels than the earlier models. I tried all the standard techniques: The Yeggster's curly cue Weiser shim on the first wheel, the pry method on the right side of wheel two and the left side of wheel three and the old flat spot location thing.

I reread Sal Dulcamaro's article in the May, 2000 issue of *The National Locksmith* where he had some success with Weiser shims, but the tolerances were just too tight on this lock to get any sort of decent reading.

Sal mentioned a method that involved drilling a hole to insert a tool that put downward force on the shackle. He indicated that with a mixture of his tool and manual downward force applied to the shackle, the wheels would bind at the flat on the dial. I didn't want to drill any holes, so I pushed the shackle in with considerable force by turning it upside down and pushing it against the surface of my table. I then slid the side of my thumb against the surface of the first wheel—moving the numbers in ascending order.

When it reached a certain number, you could feel that it was stuck and would require considerably

more pressure to turn it. Each wheel was worked with this downward pressure on the shackle and light turning pressure applied with the side of my thumb, always going in ascending order with the numbers.

After recording the four numbers that represented the "no-go" spot on the wheel, I added 5 to each number, redialed the combination and the lock was open! No drilling and no tools were required. Give it a try!

Dave Vandervelde
Michigan

Manipulating a Master Lock

I just finished originating a key for a 1991 Ford Escort when the customer asked me to open a Master Pro-Sport padlock. Normally I would suggest opening with a pinch pick and replacing the lock, but I decided to look at it.

The lock is a four-wheel, re-settable combination lock. I thought I could decode it like the Sesamee or brief case locks, but because of the construction of the lock this approach isn't viable.

I pulled back on the shackle, applying pressure on the wheels and starting with the wheel farthest from the word MASTER, I rotated it until the pressure was relieved. When you're on the correct number the wheel will be loose. Then I proceeded to the next wheel and did the same until I reached the last wheel. It didn't open at first so I tested the wheel next to last wheel and it was "stiff." I rotated it again and the lock opened!

I don't believe this lock can be shimmed, but it can be manipulated!

Thinking that I might have just gotten lucky I purchased one and have manipulated it *every* time. Usually, I can open it in a minute or less.

What a rush when you try something for the first time and it works and every time after that.

Paul C. Noll
Wisconsin

Opening Sargent & Greenleaf 8088 Padlocks

The S&G combination padlock is primarily used by the military and is made so that any attempt to open it will cause damage to the lock. They are supposedly manipulation and X-ray proof. ***(See figure 59.)***

I have found that by drilling two small holes I can find the combination without having to damage the locking mechanisms. First measure 1/4" from the face of the lock on the right side. Drill a 7/64" hole into the side in line with the top of the dial, or

Figure 59.

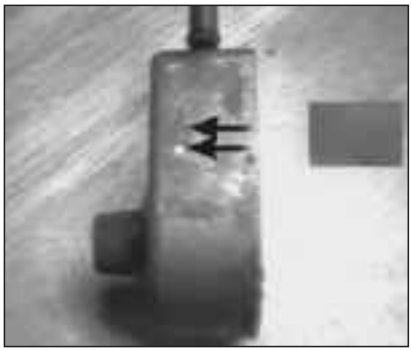

Figure 60.

about 1" down of the top of the right side. ***(See figure 60).***

About 1/8" below this hole, drill another hole with the 7/64" bit. The top hole allows me to shine a light into the lock. The other hole is so I am able to see the fence and line the gates through that hole.

To repair the holes, I gently tap the hole with a small brass screw and gently file them flat to the case.

Rodger Long
Illinois

Combination Padlock Manipulation

I decode quite a few combination padlocks. It is a good exercise, not only for saving the padlock, but learning basic combination theory, combination progression and some basic manipulation. One very common frustration I have when decoding, is after reading the gates through the shackle hole, I don't hit the combination right off. This is where it tests my skills in decoding the padlock.

For a Master 1500D padlock, I add 11 to the number decoded from the shackle hole, to get the true combination number. Sometimes the reading is off by one or two increments, thus not working. With other padlocks, the number added varies, but only found by trial and error. It is these and other quirks that I figure out how to "dial out" the right combination. This is where the combination progression and manipulation come in.

When misreading the gates, I often end up locking quite a few padlocks, with no way to start over since I locked up the shackle. I needed a way to "start over."

I came up with two methods that work the same. When it comes time to test the combination, I don't lock the lock's shackle. What I do is use another combo padlock's shackle. I either use an old cut-off shackle and vise grip pliers, or the shackle of another lock still connected and in working order. This is done by pushing in and twisting the shackle until the locking dog engages. Pull on it and it is effectively locked.

The borrowed shackle lock is perpendicular to the back of the lock to be worked on. If the right combination is dialed, the shackle will pop out just as if it were the lock's own shackle. But with one major advantage, if I mess up and don't get the right combo and need to start over, I can. Just twist the borrowed shackle 180 degrees and it will pop right out, and I start over again. This gives me a second chance that I might not have had otherwise if I messed up the first time.

Doing this has enabled me to learn from my mistakes, thus enhancing the learning experience.

David Lee
Washington DC

American Padlock Sure Shim Trick:

Anyone who has had to re-key American padlocks; and didn't have an operating key, knows what a chore it is to try and pick or shim those cylinders. The problem, of course, is the serrations within the lock that prevent easy picking or shimming.

I had a good customer bring me 15 of these padlocks for re-keying, but he did not have a key and when I tried to shim these locks open, I ran into the serrated pins. Which wouldn't allow me to manipulate my shim from the rear of the plug and create a shear line.

I used seven key blanks (1046), and cut a number one depth in the fifty space. On the second key I cut a #2 depth in the fifth space. I continued to cut each depth on a separate key until I had six keys with a different depth (1 through 6) cut in the fifth space.

I inserted the first key with the #1 cut and inserted a shim. The shim would not enter the shear line, so I knew I had the wrong cut in that space. Then I used the #2 key. Same result. The shim passed the fifth space when I used the #4 (cut to a four depth) key.

Leaving the shim in place (remember, I'm shimming from the rear of the cylinder) I set out to determine the depth for the fourth chamber. It turned out to be a number two depth. With each successive cylinder, I kept trying each of my keys until one allowed the shim to pass the shear line for that chamber. The code for the key was revealed to be 4-2-5-4-2.

I cut a key by code on my Blitz, and found that my key now fit the remaining 14 padlocks and I was on to re-keying them.

I stamped each of the keys, # 1, #2, #3, etc. for future use.

Ken Brann
Maine

Sight Reading American Padlocks

Occasionally, we get customers who have lost keys to an American padlock. Since the locks are always locked when they bring them in, there are few things one can do to open them.

Picking them is fairly difficult, and any other method requires drilling and replacement of parts. I have discovered a method to easily make the first key to an American padlock.

What allows this method to work is the fact that every bottom pin excluding the #1 and #2 pins (occasionally you find them with notches, but that is a good thing) has the pick resistant serrations at the top of the pin.

Since these serrations are always at the top and there are always two notches per pin, with a little practice you can learn to judge the distance from the bottom notch to where the pin starts to taper at the tip. By this method you can effectively determine what the size of that particular pin is.

The number one pin is easy to determine, and I found that it helps

to place pins of different lengths beside the keyway to compare them with the pin you're trying to read. Do that for each chamber and you can easily determine the length of each pin in the lock.

Once you have decoded the first pin, use a pick to push the first pin all the way up into the chamber and hold it there by applying torque on the turning tool. This will enable you can get a good look at the second pin for determination.

Once you've determined the second pin, push both the #1 and #2 pins all the way up and hold them there so you can determine the 3rd. Repeat this process for all the pins, using a flash light to assist you.

I've found that the 5th pin is pretty hard to see, so if you're confident on the first 4 pins you can progress the cuts in the 5th space. One thing you must remember is that if there are #1 and #2 pins in the lock without notches, they may fool you. A #1 pin will very closely resemble the distance from the bottom notch to the beginning of the taper on a #4 pin. As well a #2 pin will closely resemble the distance on a #5 pin.

With a sharp eye one can tell the difference between a shear line and a notch. Using this method I have made existing first keys to many padlocks.

Clifford Plummer
Canada

Editor's Note: Clifford, I can see how this would work and would like to try it the next time I have an American Padlock that needs to be decoded. The only fly in the ointment that I can see is if the lock was previously rekeyed and the person doing the work did not use original American pins. One of the fastest ways to do the American padlocks, in my opinion, is to drill out the retainer, drop the cylinder and either shim pick it, or replace it with another. Thanks for sending this in.

Master Pro Series Tip

I'm an institutional locksmith at a southern Ohio prison. We use several Master Weather Tough Pro-Series padlocks in the facility. After continuous use, the cones of the shroud on top of the lock become loose around the shackle. This allows water into the locks, causing damage when the locks freeze in the winter. My partner, Aaron McCord came up with a solution. We put rubber 1/2" OD x 1/4" ID "O" rings in both cones of the shroud and seat them against the lock body. This creates a long lasting watertight seal. Add a little grease for lubrication and your all set.

Paul W. Hawk
Ohio

Master Padlock Trick

We had a customer who needed two #25 Master padlocks keyed to the 1K blank. The only problem was that we had just used our last blank the day before and our stock replacements hadn't arrived yet.

So here's what I did. I ground off the bottom rivets of a #3 padlock (discarded because of broken shackle) and removed the cylinder. It is pretty much just like the ones used in the re-keyables, but has two crimps, as retainers, instead of one. After shimming it to turn, I rekeyed

it through the drill holes in the bottom of the cylinder.

With the regular plug extension it worked just fine. I made sure to get a few extra 1K cylinders in the next week.

James Barthelemy
Tennessee

Warded Padlock Pick Set Tip

When I bought a set of warded padlock picks, I put them on my key ring with my house keys and forgot about them. I may have used them once or twice during that time, but I really never did much with them. Then last week, I was with my daughter when she left her keys in the ignition of her 1987 Toyota Camry and locked the doors. Since it was a warm day, I didn't have my jacket with me and my regular picks were in one of the jacket pockets. And since we were in my daughter's car, I didn't have any opening tools with me.

The only picks I had were the warded padlock picks. Thinking that there was no way it could really work, I decided to give them a try since it was our only option aside from calling a locksmith to open the car.

Much to my surprise, the small single ward pick unlocked the door almost as easily as using the key! ***(See figure 61.)***

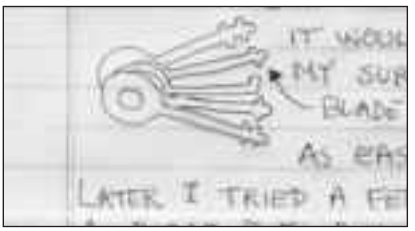

Figure 61.

Since then, I have tried it on a few other vehicles and have opened a Dodge D-50 pickup, a Nissan pickup and the back door on my RV! I'm anxious to see what other vehicles this pick set can open.

Jim Gerard
California

Chapstick for Padlock First-Aid

I was working on a Master 220 padlock when everything came out: springs, ball bearings, even the little roll bar. Not having four hands and not wanting to pull the door panel on my car to get some of that gooey black stuff to hold the roll pin and ball bearings in place, I started to think about what I could use instead.

I searched my medicine cabinet and viola! Chapstick. I just rolled the ball bearings across the top of the Chapstick and they stayed right where I put them. Then I rolled the roll pin across the Chapstick and placed a dot of the Chapstick on the end of the Allen wrench I was using and picked up the roll pin and placed it where it belonged.

Even my little fingers were too big to put it where it belonged. Now I could put everything else back. It sure saved me a lot of time and aggravation. When you don't have goo from a car door Weatherguard or Lithium grease, go for your Chapstick.

Another nice thing about Chapstick is, it fits into your pocket.

Joan Yarrington
Texas

Deadbolt Modification

An elderly lady wanted me to install a new deadbolt and knob on her front door. Simple enough, except she wanted them low enough that she could open them if she fell and couldn't get up. She has very bad arthritis. The trouble was that would leave the existing holes in the door—and the new locking points would be very low on the door.

We don't have a lot of home break-ins in this area, but this set-up would make it really easy to break the door open. I spent one day thinking on how to get the deadbolt unlocked and the latch retracted all while lying on the floor. Yes, I actually laid on the floor and looked at my locks at home, trying to get an idea of how difficult such a maneuver would be.

Here is my solution: I took a standard Grade 3, single cylinder deadbolt and drilled a hole through one end of the thumb turn, large enough to get a split ring through. I than took a 33' to 36' piece of rope and tied one end to the ring. I drilled a hole in the center of a dowel rod (3/4" in diameter, by 3-1/2" long) through which I passed the rope and tied it off, to make a handle.

The rope's length depends on how high the deadbolt is. I tested this first with some beaded chain I had but found that the rope worked better.

For the knob: I installed a panic-proof grade 3 knob with a door handle adapter. I also put a rope with a handle on this.

I would have used a "unit" lock on this door where turning the knob, or depressing the lever would have unlocked both the latch and the deadbolt. Unfortunately, cost was a consideration and I had to work within the customer's budget. The main thing is that I enabled this lady to open her door (even if she was lying on the floor) and helped her gain peace of mind while maintaining the best security she could afford.

Rodger Long
Illinois

Latch Fix Tip

Recently I was called to repair the lock in an interior wood door. The customer reported that it would not latch and it was difficult to close.

I noticed that the top of the door above the lock was hitting the frame and in order to close the door I had to lift up on the lockset. When I did this I also noticed that the frame moved on the hinge side. This is a common problem on many of the calls I receive. It seems that when these frames are installed the dry wall crews who generally install them use dry wall screws to attach the frame to the 16 gauge metal stud.

With the higher usage doors the screws often wallow out their holes

and cause the doorframe to loosen. The way I have found to repair this is to remove the doorstop trim from the frame on the hinge side. Close the door, place an air wedge beneath the door—directly below the lock— and inflate it until I hear the latch "click" into the strike. I then install 1/4" x 3" self-tapping screws with a 3/8" drive head through the frame and into the stud. This has always worked very well and the trim fits nicely over the screw heads.

Weyland Schaefer
Texas

Editor's Note: Weyland, the problem you describe is very common with much new construction. Your "fix" is right on the money. I use a screw called a PlyMetal screw. It is self-tapping for both wood and light metal. All you need to do is put it in place and drive it in. Since it is a flat-headed screw and you're going to put the doorstop (or rabbet) back on the door, you don't have to do any counter sinking on the frame.

Securitron Mag Lock Tip

While installing a Securitron MagLock, we were having trouble trying to get an alignment for the lock on a very active door. The paper template had been torn twice by folks opening the door while we were trying to mark out drill sites and we were getting a little frustrated.

I decided (since the door was properly marked) to mount the armature, or "shoe plate". Then I used a 9-volt battery, to connect to the magnetic lock and placed the lock against the armature (with the magnet upside down to protect the leads that come out of the top) and also against the doorstop on the frame.

The battery offers just enough current to keep the magnet in place.

Then it was a simple matter of using a long bit in the drill to mark the holes for the mounting hardware. Once that was done, we measured the drill point for the wires to go up into the header and completed the install.

Jay Christie
North Carolina

Von Duprin M99

For those that are not familiar with the workings of a Von Duprin M99 panic device, the tailpiece of the cylinder fits into a cam, which raises and lowers a toothed steel plate (the arrangement resembles a rack and pinion) which locks or unlocks the outside trim. By preventing the thumb latch from being depressed the latch cannot be retracted.

As these devices age, the soft metal of the cam wears out and allows the teeth on the stamped plate to slip past the worn teeth on the cam.

The first time I ran across this problem, I found out that the cam the cylinder tailpiece fits into is not available as a separate part. So, I started robbing them out of old units in my shop and changing them out. It's not the easiest job but it is do-able.

During a repair on a double door, I realized that the devices

are not handed and simply switched the panic devices on the doors. I then had a brand new cam under the cylinder and the worn cam on the inactive door. It doesn't matter if the cam on the inactive door is worn since there is no key access to that door.

I shudder to think how many of these I have repaired before realizing that help was just a few inches away!

I'm not advocating running a business by never selling any new hardware. But, I'm also employed at a school district and enjoy telling my supervisor that I've saved the district five hundred dollars before my morning break.

Elgie Lejeune
California

Quick Clip Removal Trick

Many Years ago while master keying a church building with Sargent locks, I broke three E-clips that I tried to remove from the cylinders. After a little experimentation, I found a way to remove those clips that worked very well for me.

First, I bought a pair of good quality needle nose pliers.

Then I place the cylinder (bible down) on a padded surface. Then using the pliers, I put one leg against each end of the clip and gently forced the clip off the back of the plug. ***(See figure 62.)*** I put equal amounts of pressure (or as near as possible) on each side of the clip so that I can remove it without damage.

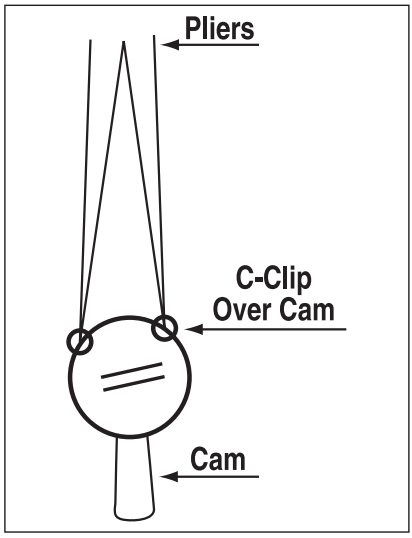

Figure 62.

This method does not seem to distort the clips anymore than pushing it on with a pair of pliers or other tool would.

Marv Walker
Idaho

Fast Kwikset Removal

Recently, I had to rekey a 200-unit senior apartment house complex. The doors were all equipped with Kwikset interconnected lever locks. The deadbolts are held in place with a 1/4" bolt, with a flat-blade screwdriver slot in the head, with a hole in the center of the bolt that is threaded 8-32.

I found a regular flat-bladed screwdriver was prone to slip out of the slot. Each time that happened, it slowed the job down. Looking for a way to move more quickly and efficiently, I used a flat-bladed driver bit that I

Figure 63.

ground down on each side of the tip as shown. ***(See figure 63.)***

That modification allowed the driver to "seat" firmly in the head of the cap screw and I could use my cordless drill as a driver to remove the retaining screws very, very quickly. And, of course…put them back on just as quickly.

Everett Good
California

Monarch Lever Fix

A problem I have encountered with the Monarch lock which has an outside lever, is the key suddenly refuses to operate the cylinder and the outside lever cannot be locked.

The locking mechanism consists of a shaft within a larger shaft with a press-fit washer holding the smaller diameter shaft inside the larger.

What happens is the washer wears and becomes loose. When the washer loosens sufficiently, or actually comes off, these shafts do not engage properly when operating the key to lock the lever.

My fix for this problem has been to "seat" the washer over the smaller shaft (which is inside the larger tube) and make sure the washer is solidly staked to the shaft. This has worked very well and holds the shaft in position so it can actuate the locking mechanism.

If the washer is staked strongly enough, it will hold indefinitely.

Merlin Bechtel
Mississippi

A-1 Quickpull Conversion for Schlage

A simple modification to the A-1 Quickpull will allow the opening of Schlage "F" series key-in-knob locks!

Normally, on these locks, the knob retainer cannot be depressed when the knobset is in the locked position. However, if the cylinder is pulled only slightly forward (toward the front side of the cylinder) the retainer can be depressed and the knob removed.

To utilize the Quickpull for this application, remove the Kwikset blank from the puller and duplicate the blank on an original Schlage "L" keyway (grandmaster). You must use the original blank as this blank is made of nickel-silver and is very strong.

Figure 64.

Do not duplicate the bitting area (the notch that grabs the pin) the same on the Schlage modification as the Kwikset. The closer to the tip of the blank you cut the notch, (fourth or fifth spacing) the better. (***See figure 64.)***

Now insert the Schlage blank in to the A-1 Quickpull and then insert the blank into the Schlage "F" series key-in-knob lock. Attach the wing nut and gently tighten down to the point where the center of the knob bows outward slightly, moving the cylinder outwards. Now push in the retainer (usually on the latch side of the door if the lock is installed properly) and remove the knob. Once the knob is off, lift the pins to remove the tool and service as needed.

Because of the shape of the knob and the lightness of the material, the face of the knob can be easily bent under pressure. If the center of the knob is slightly distorted, you can reset it with a large ball bearing or the rounded end of a screwdriver handle. Simply place the bearing, or the screwdriver handle in place and gently tap with a hammer to pop the center of the knob back to its original configuration.

Properly and carefully done, this is a quick way into a Schlage "F" series without damage to the finish or function of the lock.

Wade Bovender
North Carolina

Vertical Rod Panic Device Tip

When I work on surface mounted vertical rod exit devices, and it becomes necessary to remove them from the door, I mark the position of each rod before I disassemble the device for removal.

First, with the door open and the rods extended, I mark the top and bottom rods where they enter the cutouts in the cover plate of the device. (***See figure 65.)*** Once I remove the cover plate—just to be sure—I count the exposed threads on the rods and mark them with a felt pen or pencil.

That way, when I have to remove the rods from the latching mechanism of the device, I have a visual reference point when I reassemble the device. If I alter the rod adjustment while servicing the unit, I only have to look at my

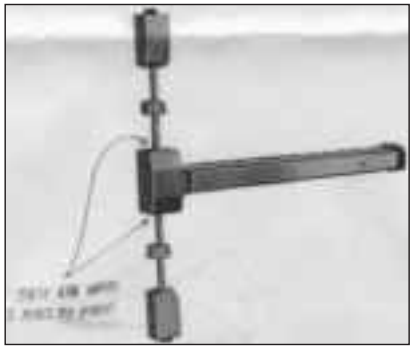

Figure 65.

reference marks to determine the proper adjustment.

I always use a felt pen or pencil for making these marks, as either will wipe off the rod or the cover plate with no trace.

I find that by taking a little bit of time to mark these rods at the beginning of the job, saves me a lot of time when I've completed my repairs and am ready to reassemble the unit.

Jeffery A. Sibley
New York

Weiser Key In Knob Tip

I've developed the best way I've yet seen to remove the cylinder from a Weiser key-in-knob when the inside knob wears out and the key won't unlock it anymore.

I've made a tool from a discarded Weiser key blank, which allows me to remove the cylinder from the lock every time with ease. No more filing or wasting key blanks.

I begin by cutting approximately 3/8" off the tip of a discarded Weiser blank, notching it and then filing a "V" in the piece so it will sit perfectly on the tip of the original key. ***(See figure 66.)***

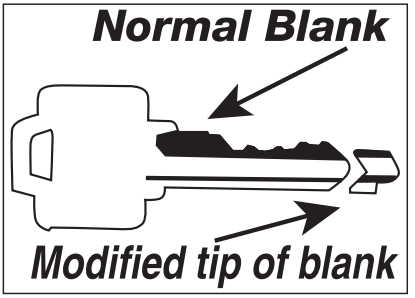

Figure 66.

Then I insert the tip extender into the cylinder and "seat" it with the operation key. By pushing in on the operating key, the extension will push the lock spindle back far enough for the key to turn the cylinder to the removal position.

The tool is easily removed from the back of the plug and can be re-used again. Since it is such a small tool, I find a good place to keep it is in the handle of my Snap-On screwdriver.

Jerry Gray
Canada

Camper/Mobile Home Dead Bolt Installation

I have found that most of the time when you install a deadbolt on a motor home or camping trailer, there is a problem with the location of the thumb turn or inside cylinder. It is often in the way of the inner screen door and interferes with the closing of the screen door or the inside cylinder cannot be accessed from the inside without modifying the screen door.

To rectify this problem, I install the deadbolt in the wall of the camper or motor home—on the latch side of the door—and only have to mortise in my strike hole on the door.

This arrangement offers just as much security without creating a need to modify or change any of the doors or hardware.

To increase the security of the door, I always use a thimble strike in the door.

Michael Roberson
Nevada

Schlage Deadbolt Tip

I have been a locksmith for 10-years and got stumped on the removal of a Schlage heavy-duty deadbolt.

The customer called me to re-key their restaurant and after doing all the outside doors and some interior doors, I came to an office that had a heavy-duty Schlage double-cylinder deadbolt on the door that I was not familiar with.

I couldn't find the retainer screws that held the cylinders together and decided to remove the screws from the deadbolt latch, on the off chance that I could access the cylinder retaining screws like I would on a Lori. No such luck.

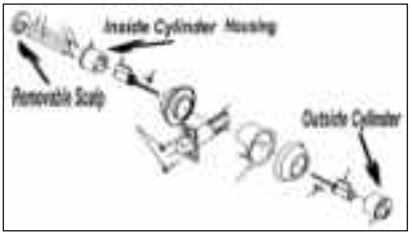

Figure 67.

Not wanting to damage or destroy the lock, I called Schlage's technical service line and the person that answered was very helpful. He explained that the inside cylinder housing had a scalp plate over the retaining screws and that I could remove the plate and access the retaining screws to remove the deadbolt from the door for re-keying. He even sent me a fax with a drawing explaining the procedure. ***(See figure 67.)***

George Steiner
Nevada

Keyless Deadbolt Opening Tip

There are as many, if not more, apartment residents in my city that have keyless deadbolts on their doors, as those who do not.

Often I am called to unlock a door and find out, upon arrival, that the lock that needs to be defeated is none other than a keyless deadbolt. Yes, I know…these can only be locked from the inside since there is no outside keyhole. However, sometimes the resident has left the apartment from the patio or balcony after latching the keyless deadbolt without realizing it. To compound their problems they also, somehow, locked themselves out on the patio or balcony by slamming the sliding door.

On a patio there's usually no big problem unless a charley bar or similar bar has fallen down. On a balcony? Well, I don't know how they got down, but I'm not climbing up.

On a recent call, a lady had told her 3 year-old nephew to lock the door when she left and he did—even the keyless deadbolt. Then he fell asleep. The mother had knocked and banged on the door without being able to awaken the boy. Finally, she called me.

I found the best and easiest way to open this type lock was to drill a 1/4" hole through the metal cover of the door and a little way into the wood. Of course, I was careful not to drill straight through the tailpiece hole. After drilling my hole, I simply stuck a screwdriver in and turned the latch.

Most of these apartment keyless deadbolts that I have encountered seem to have their latch holes seven inches above the keyed deadbolt, with a standard 2-3/8" backset.

I set my drill bit between 2-3/8" and 2-1/2" from the edge of the door. Sometimes, I can either see or feel with a plastic strip where the latch is located and just measure the 2-3/8" from that location.

After getting the door open, it's a simple matter to take some epoxy and fill in the small hole I drill.

Joan Yarrington
Texas

Schlage Cap Retainer Substitute

Have you ever lost the small cap retainer pin on the end of a Schlage cylinder? You know; the one that is spring-loaded and if you're not careful, can go flying off, never to be seen again?

Well, it happened to me again! I was on a call a considerable way from the shop and as I took the cap off the back of the plug the retaining pin came out of the hole like it was shot from a rifle!

After much frustrated looking around the van without finding the errant pin, I began looking for a substitute.

What I found was that a small Pop-Rivit® made a workable substitute. Of course, I had to cut it to the proper length but the point on the Pop-Rivit® fit snugly into the serrations on the retaining cap and the shaft of the Pop-Rivit® was thick enough to prevent the new retaining pin from jumping out of the hole, past the retaining cap.

Virgil Ertle
Indiana

Door Header Drill Press Idea

Drilling into the bottom of a header to create pilot holes, or holes that I would have to tap when mounting closers, became a chore for me. I decided to find an easier way to accomplish this task before I burned out on the idea of installing the closer.

Figure 68, shows a vertical drill press I made specifically to make drilling the underside of headers simpler, easier and more accurate. The costs were minimal as I picked up a small used drill press at the local swap meet for about $15.00. The pipe I needed can be found almost anywhere (I replaced the pipe that came with the press with a 7' length of

Figure 68.

Figure 69.

galvanized pipe to give me the height I needed).

If you have ever drilled reinforced steel headers you will appreciate this tool. No pushing up on the drill with the top of your head. No standing on a ladder and using your shoulder to get leverage. No standing under the drill with metal chips and concrete dust falling down your shirt. ***(See figure 69.)***

To make this rig, I kept the old base, inserted the longer pipe and attached the press part upside down at the upper end of the pipe. I am going to modify this rig by removing the base and putting one of those rubber cups on the bottom end of the pipe for better stability. Taller doors would of course need a longer pipe.

Believe me, this rig takes the hassle out of drilling holes in the underside of the header.

Mark Rankin
E-mail

Fast Rekey Trick

To speed up the re-keying of deadbolts, mortise cylinders and key-in-knob locksets on residential or commercial properties, I suggest having plugs and keys ready for the job at hand.

I use spare plugs for each type of deadbolt, mortise cylinder and key-in-knob, or other lockset that I normally carry in my service van. I obtain these plugs form either spare, non-reusable locks I have collected or purchase them from my distributor.

I cut two keys and pin the plug to those keys. I leave the key in the plug and wrap electrical tape (sticky side out) tightly around the plug to cover the pins (with the key in the plug, the pins hold the key in place) then twist the tape and put one more wrap all the way around the plug. This holds all the pins in place, prevents the key from coming out and will protect the plug all at the same time. I often write the bitting on a piece of paper and put it on a key ring with the keys.

I make up several different combinations of plugs during slow periods or when I have spare time. For example, I try to keep two plugs KA with on key in each plug and the pair joined as a set with a key ring. Other combinations are a deadbolt and key-in-knob combination or I repin two mortise cylinders to the same key and keep the set together with electrical tape as mentioned earlier.

I find that these pre-pinned plugs and cylinders really save me time on the job and allow me to accomplish more in any given day. Especially when I'm really busy.

Tom Lynch
Connecticut

Anderson Door and Window Tip

I was called to a newer home that had Anderson windows and doors. The lock on the door had ceased to function and the customer wanted it replaced. I had never seen a lock quite like this one and decided to call Anderson for some help.

They were extremely helpful and sent me a completely new unit, which included the entire front edge of the door, the lock, locking bars and bolts. All at no charge since the door was not more then ten years old!

If you happen to get called for one of these doors (or their windows) and call Anderson for assistance; be prepared to give them the size of the door, the size of the glass and the age of the door. The age of the door can be determined by a number that is on the top right-hand side of the glass. In this case the numbers were CIG-21-98. I assume the "98" portion of the number represented the year 1998, which meant the door was still under warranty.

Anderson's toll-free number is (888) 888-7020.

That's another telephone number I intend to keep on file. Never know when I'll have to service another Anderson door.

Fred Spencer
Pennsylvania

Editor's Note: Fred, thanks for the tip. Let me expand on it for a moment. Many door and hardware manufacturer's have extensive warranties on their products. If one of their units or the hardware on that unit fails, it is always a good idea to contact the company for information and assistance. Often you will find as you did with Anderson, that they not only guarantee their product, but also will send out repair components at no charge to qualified individuals. Also be aware that if you can get your name placed on their approved technicians list, they will send you a LOT of their warranty work.

Jackson Device Quick-fix

A customer called with a complaint that they could not lock their door. I asked them what the symptoms were and as usual, I was told that the lock had been "acting funny" for a few days and this morning, they could hardly get it unlocked to get in the restaurant.

When I got there, I found the door had a Jackson exit device on it and the outside key trim would not retract the latch on the device. This meant that it would not allow the latch to be released to lock the door, either.

After taking the device off the door and examining the latch mechanism, I found that the post that holds the Nylon gear, which retracts or throws the latch, had cracked. The post was cast aluminum and molded as an integral part of the base of the latch mechanism.

Short of replacing the entire device, I was at a loss as to how to fix the problem and began to look the construction of the piece over. The gear was held on to the post by a "C" clip and once removed allowed the gear to come off. Of course when I wiggled the post, the post came off! So much for that!

Figure 70.

I thought about Epoxy, but discarded that idea when I realized there was nothing to epoxy the post to. Then I thought about drilling a hole through the base where the post had been molded and reattaching the gear, etc.

I carefully drilled an 11/64" hole in the aluminum base, trying to carefully allow for the nylon gear and aluminum gear alignment. Then I tapped the hole to 1/4-20 and before threading a flat head screw 1/4-20, liberally doused with Red Loc-Tite, into the hole from the bottom. I then counter sank the backside of the base where the screw would go. ***(See figure 70.)***

Next, I carefully drilled out the center hole of the nylon actuator gear, dropped the gear over the new post, measured the post for length, cut it off with my Dremel Tool, then cut a slot in it for a new "C" clip.

I put the gear over the post, put the new "C" clip in the slot, reassembled everything and put the device back in service. It worked like a champ. I told the store manager that I couldn't guarantee that the repair would last forever and that if it started giving him trouble, to call me and I'd install a new device for him. That was over a month ago, so we'll wait and see.

Danny Corner
Florida

Deadbolt Opening Trick

Opening locked deadbolts, particularly Kwikset, can often look like a demolition derby. Here's an easy way of opening many deadbolts where the tailpiece has become disengaged or a key is lost and there's just no other way to get in; short of drilling out the retaining screws or the plug.

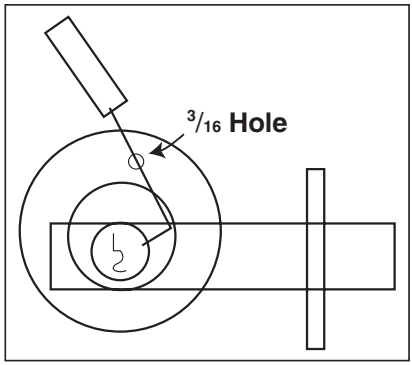

Figure 71.

About a 1/4" off center of the keyway and about halfway up the housing, drill a 3/16" hole at about a 30° angle towards the boss on the deadbolt where the catch rests when the deadbolt is in the locked position. ***(See figure 71.)***

Insert a small hooked tool (even a slim ice pick will do it) and flip the catch to the rear boss, thereby retracting the deadbolt and unlocking the door.

Repairs are simple: a new or used trim scalp to cover the hole in the housing, a new tailpiece and the lock is back in service.

Harold Wogen
Florida

Editor's Note: Harold, thanks for the tip. The trickiest part of this idea is to get the access hole high enough to clear the inner housing and stay low enough to keep from damaging the door. Several years ago a company was offering a tool for this same style opening, but were advocating that you drill the access hole in the door above the lock housing!

Medeco D-11 Opening Trick

I've come across a lost key situation on numerous occasions, where the only key for the Medeco D-11 deadbolt has been lost and access to the premises necessary.

I've developed a quick, drill-oriented method for opening these locks that is nearly as fast as drilling a standard deadbolt cylinder. This will even work on those deadbolts that have the shield on them to prevent an ice pick from manipulating the bolt.

Drill a 3/16" hole all the way through the keyway and out the back of the plug. ***(See figure 72.)*** That hole should exit the plug just below the tailpiece of the cylinder. If you use the key tip depression on the face of the plug as a guide for your drill point and drill your hole dead-on straight, you'll exit the plug just below the tailpiece.

Do not use a drill larger than 3/16" or you will shear or mutilate the tailpiece making it unusable. Also, keep in mind that a regular bit is sufficient, since this drill point keeps you away from all the hardened pins in the cylinder that protect the lock from normal drilling efforts.

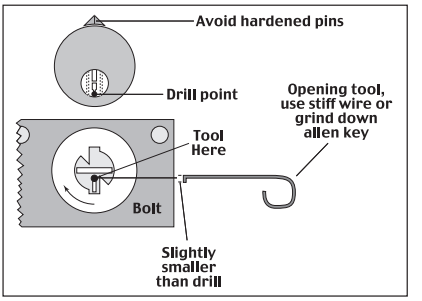

Figure 72.

After drilling the hole, use a stiff wire or modified Allen wrench to make a tool as shown in the illustration. Insert this tool through the drilled plug and hook it into the cutout in the tailpiece and turn to retract the bolt. That's it! It's quick and simple.

Jack Tom
New Jersey

Primus Bluff Tip

A customer wanted keys that could not be duplicated, but of course did not want to pay the cost of a restricted key system.

To minimize the chances that someone could duplicate his key, I rekeyed his Schlage "C" keyway locks to some discarded Schlage Primus keys that I had. It will keep someone from getting the keys duplicated at the hardware store.

Of course, if the key cutter or another locksmith recognizes the trick for what it is, they could easily dupe the key on a "C" blank.

Larry Wright
South Carolina

Door Opening Trick

One evening I was called to open a store. An employee had taken the trash out and the door locked after her.

No matter how I tried; I couldn't pick the lock to get the door open. Before getting the electric drill out, I decided to try something else. There was a large gap between the doors so I got out an auto-opening tool with a large loop on one end. I slipped the tool in the gap between the doors, grabbed the bar of the panic device and gave it a pull. The door opened.

This is something you can try if you're in the same situation. I later talked to the manger of the store a few days later and informed him that the gap must be covered with a shield.

Kenneth Novey CRL
Iowa

Open Clubs Without Breaking

If I have learned anything about picking, I find the biggest obstacle on nearly every picking job is getting the tension wrench to stay where you want it to stay. It seems that no matter where you place the tension wrench, it often slips just when you're certain you've got the lock ready to open.

I found this particularly true when trying to pick steering wheel locks. However, I believe I've found an easier way of picking those difficult to pick locks without damaging the lock or the steering wheel, and without looking like I'm a one-man wrecking crew using a breaking tool to remove a steering wheel lock.

Please don't misunderstand me. I would still suggest that you have a breaking device or other backup available for those stubborn locks that simply refuse to budge when you're trying to pick them. I will say that since I've tried this method, I have not, so far, found any Club (either the older style or the newer style with the "X" keyway) that would not open within five minutes!

Here's how I do it.

I drill two small (1/16"), shallow holes one on each side of the keyway, or in case of cross keyway, between cross openings. Drill one hole on each side of the center. I insert a tweezers type tension wrench in the holes and apply light pressure with a double ball picking tool. I rake the plug a few times on each side of cross keyway, or upper and lower wafers in the original club. Then, I increase the pressure and rake it again. The cylinder will usually turn with medium to light-heavy pressure, but I always make it a point to start will light turning pressure and work up.

This drill-a-hole technique works well for me on residential

locks too, but with different picking tools. Anytime the keyway is obstructed, lock is upside down or any other cause that makes the lock harder to pick. So, just before I give up on any lock and am ready to drill out the plug (and destroy the lock); I give this technique a chance. Try it. I think you will find it an acceptable method of opening the more difficult locks.

Boban Klasnikov
Pennsylvania

Weiser Lockout Tip

How many times has a customer called you and said, "I'm locked out! I have my keys they just won't open the door"? When you get there, sure enough, you find that the lock is a Weiser. No matter how much the key turns, that knob or button just won't pop.

Here's what I do.

First, I pull the cylinder out using a Weiser shim and look at the back of the cylinder. Sometimes the square spindle seat is reamed out. If so, simply use a pair of needle-nose pliers and turn the small square spindle manually. Most times, however, I find that the inside knob spindle is rounded out, and no amount of turning and twisting with pliers will unlock it.

When that occurs, I pull out the small spindle, take off the washer and spring, turn the spindle end-for-end so that the crimped wings that the washer seats against go into the larger square shaft first. I then push the small square spindle down the shaft until I meet resistance. Tap gently to get some grip, and use the small spindle to gently pull the larger square shaft out just enough to disengage it from the inside locked knob.

Then all you have to do is turn the outside knob and you're in. Once in the house, you can service the old lock, or replace it as necessary.

Darin M. McFarland
Wyoming

Triple Play

Here's an easy way to bypass a supplement MS lock:

I learned this from a fellow locksmith years ago so I credit his clever ingenuity. This tip is for opening storefront door MS locks where the cylinder cannot be picked, for whatever reasons. The great part is no special tools or drilling techniques are required.

Start by removing the bolts that hold the pull handle to the door (must be externally mounted handle for obvious reasons). Insert a stiff wire (hanger wire works fine) through the bolt hole and down (or up, as the case may be) the stile of the door.

When you reach the lock, push down on the wire to release the locking pin on the swing-bolt, just like the lock tailpiece would do. The lock will fall open easily and the door is

open! If it sounds easy, it actually is. Reinstall the handle, service the lock, and collect your money! Note that this works only if the lock is mounted below the pull handle bolt.

If the lock is mounted higher, you can remove the glass stop, carefully drill a hole in the edge of the stile just below the line where the bottom of the cylinder is located. Then you can reach in with a stiff wire and manipulate the latch.

This next tip will help save your pants, fingers and other stuff when impressioning:

If you have worn holes in your jeans, or have scars from file punctures on your leg, you will find this tip useful. I have a square patch of thick suede leather (donated from an old skirt, my wife appreciates me not ruining any more clothes) that I keep rolled up in my kit. When impressioning keys I lay it over my knee for an instant workbench. It also works great on top of file cabinets, car trunks, desks, safes, and all the other places we work.

The pad not only protects the surface you are working on, it is a soft landing pad for springs and small parts that like to bounce further than imaginable. You can also roll up your file inside it to protect it in your tool kit.

Unscrewing those tilt column levers with their red Loctite covered threads can be difficult. To prevent scratching them and get a better grip, I cut a piece of rubber from an old tire inner tube that I put under the vise-grip jaws before clamping down on the lever. I also use the rubber pieces cut to custom sizes for making weatherproof shims to level up padlock hasps, doorplates, etc.

James Unsworth
Canada

Club Removal and Spring Steel Tip

Here's yet another use for those steel inserts from wiper blades.

I've had numerous calls over the years to remove steering wheel "clubs", usually the pick resistant four-sided key variety due to their ability to lock without the necessity of using a key to lock it.

My technique uses a Slim-Jim I made from the wiper blade steel that I insert down the shaft alongside the locking bar. Because of the ratcheting spring latch design, I can hook the latch and by manipulating the bar, the locking section slides in past the latch one stop at a time. It only takes two or three stops to have it short enough to remove. The best part is it's in perfect working order should the key turn up later!

This works on broken ones as well, where the cylinder turns but doesn't retract the latch. So put away your drill bits and bar busters, you'll now be opening these in seconds. The original "Club" is deadlocking, but easily picked the conventional way.

How many times has the only thing you need to repair a patio lock or grip set handle been a little piece of spring steel?

My favorite (free) source for this is the return spring from a lawnmower pull start rope. It's the perfect width for most purposes and one old mower will keep you in springs for years. For different sizes you can try other sizes of motors from string trimmers up to Roto-tillers. Be careful when removing them though, they don't call them springs for nothing! While you're at the scrap yard, pick up old wheel bearings and remove the balls for safe door repairs.

James Unsworth
SBC, Canada

Lockout for Simplex L1000

A customer with a Simplex L1000 lock installed on a back door wanted a way of preventing employees from coming back into the store after closing without adding an additional lock. I rigged a locking arrangement utilizing a 6" shackle padlock, an "EYE" bolt and a couple of nuts and washers.

I measured the clearance between the top of the shackle and the top of the lock body and placed the bolt at the proper height. The last one out the door at night was responsible for putting the lock through the eye-bolt and under the L1000's lever handle. ***(See figure 73.)***

Figure 73.

Even if an employee were to return and enter the proper combination, they could not access the store because they could not depress the lever. The lock is positioned in such a way that it is impossible to force the lever handle past the lock body.

Pete Gamble
North Carolina

Lever Tip

The other day I was called to open a door in a doctor's office. When I got there, I saw that it had a Corbin/Russwin leverset. The lever was mounted so high on the door that the Keedex K22 under-the-door lever tool just barely slid over the lever when the tool was standing straight up.

I tried to pick it, but that just wasn't going to happen. Each time I tried to pull the lever down

with the tool, it got just about to full travel and the tool slipped off the lever. This happened more than a dozen times no matter how careful I was. I was at a loss so I stopped to think a minute.

If only I could keep that tool on the lever for one more inch of travel. I asked the nurse if she had any masking tape. She came up with a roll of gauze pad tape. I wrapped it on the tool on the short part between the long upright and the loop where the wire attaches. I put it on with the sticky side out. The first time I tried it again, the lever opened right up. I now know to bring my tape with me everywhere.

Steve Myslik
South Carolina

Opening a Storefront Door with a Car Tool

A while back I was asked to open a vacant storefront for a contractor that was remodeling the building. When I arrived, I found the entire outside was covered with plywood, even the doors. I had the contractor remove the plywood from over the doors so I could access the locks.

The last time I was at that particular site, it was a thriving Taco Bell. Since then, someone had installed high security cylinders on the doors and I knew that I had very little chance of picking those cylinders. On the inside of the doors the locks were operated by a thumb-turn. I focused my opening efforts on that thumb turn.

I used the short end of a "Z" tool from my automotive opening kit to manipulate the thumb-turn and unlock the door. It took a little effort to get the tool between the doors, but once I had the tool inside, it was a simple matter to flip the thumb turn, open the door, remove the cylinders and install new cylinders with a standard keyway.

Fred Spencer
Pennsylvania

Editor's Note: Fred, good opening. To make it easier the next time, use your Air Wedge—if you have one—to help gently spread the doors enough to insert your tool. For future information: Lockmasters makes a tool designed specifically for opening a set of double aluminum, narrow stile, store front doors. It's a dandy.

Opening A Kwikset

There is an easy way to unlock the Kwikset 400 series key-in-knob lock when it won't pick. This process is similar to opening a locked vehicle.

Using an ordinary steak knife (I dull the blade so that it will not scratch the surface of the door, or if the tool slips, cut a finger), I insert the knife between the rose of the lock and the surface of the door, as shown. ***(See figure 74.)***

The knife blade is inserted either at the top of the lock, or the bottom, depending on whether the lock is on the right hand side of the door or on the

Figure 74.

Figure 75.

left-hand side of the door. If the lock is to the right, the knife is inserted at the top of the lock. If the lock is to the left, the blade is inserted at the bottom of the lock.

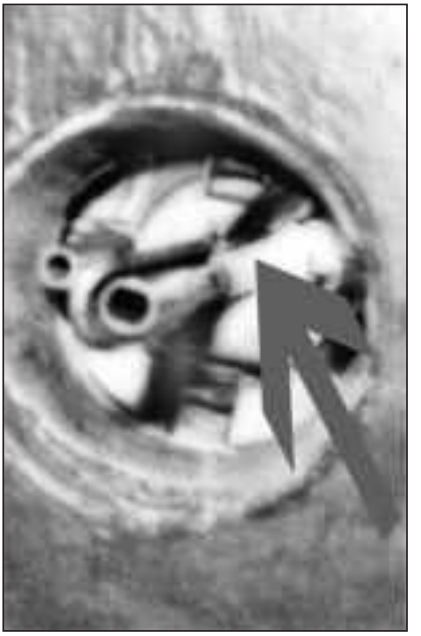

Figure 76.

Figure 77.

The knife blade is placed behind the rose and pushed downward (or upward, as the case may be) until some resistance is felt (about a 1/2"). Work the knife slightly to the left to bypass the obstacle. Once the obstacle is out of the way, rotate the blade from the 12 o'clock position to about the 11 o'clock position as shown in ***figure 75.*** Now, push the lock down about 1" until the tip of the blade engages the "V" shaped notch on

the locking spindle. ***Figure 76,*** is an enlarged version of the part of the lock spindle you are aiming for.

While pushing down on the blade, rotate the knife handle back to the 12 o'clock position (keep downward pressure on the blade) and you will unlock the knob set.

When working on the opposite side of the door, keep in mind that all of your positioning is reversed and you have to push upward rather than downward.

Larry Bors
Oklahoma

Editor's Note: Larry, thanks for the tip. I know (from experience) that it will work provided there is enough room between the surface of the door and the rose on the lock. If the lock is mounted tightly to the door, there is not enough room to get the knife blade in position. Several years ago, there was an ice pick trick that worked in a similar fashion, although that procedure suggested drilling a hole (angled) between the door and the rose to allow entry of the ice pick. I've found the easiest, and cleanest method (although more expensive than your tip) to open a locked Kwikset is with A-1 Security's QuickPull, which is available from most suppliers. ***(See figure 77.)*** Just pull the cylinder, flip the spindle to the unlocked position and open the door.

Baldwin Images Lever Trick

The cylinders for the Baldwin Images Levers have a small round security plate that fits on the back of the cylinder under the tailpiece and screw cap retainer. Often, you will find (especially if the lock has previously been rekeyed) that this plate has been left out.

If you're called to open one of these lever sets, insert your pick all the way into the keyway. If you feel it hit a solid obstruction with no spring to it, the plate is in place and you'll have to depend on your picking skills to get the lock open.

However, if you push your pick in and can feel springiness, then the plate has been left out. What you are feeling is a spring-loaded actuator rod in the back of the lever mechanism. Simply continue to push on your pick, until you can't push it any deeper. Hold the pressure and turn the lever to open the door.

This trick does not unlock the door, it merely allows you to turn the lever and open the door. The door remains in the locked mode.

Crystal Nawrocki
Maryland

Opening Schlage F-Series Locks

Here's how I open a Schlage F-Series key-in-knob lock, or lever set in just a matter of seconds—without a key!

First, I grasp the knob and apply light and continuous turning pressure (in either direction). Next, I use a small hammer and sharply strike the face of the plug, making sure not

to hit the knob or lever and risk denting it.

You will be amazed at how quickly this opens one of these locks. After a few times and once you develop a feel for the procedure, you can open F series locks in a matter of seconds.

The reason this procedure works is that the locking mechanism is spring loaded, and by striking the face of the plug, you are actually bouncing the two locking cams into the open position for a split second. That is why you need to engage the knob with light and continuous clockwise or counter-clockwise pressure to unlock it.

This method does work on the "F" series lever, however I found it takes a lighter turning force and a sharper hammer blow.

Mark Anthony Novitsky
Virginia

Editor's Note: Mark, I would suggest using an uncut SC-1 blank, inserted in the plug and hitting the bow of the blank with the hammer. It's a better target and there's less chance of doing damage to the face of the knob or lever. Also, bump keys work very well on F series locks. Either method can be quick and effective. Thanks for sharing your idea with us.

Notes

Stripped Screw Removal

The CRAFTSMAN DAMAGED SCREW REMOVER MODEL #52154 is available as a set of 3 with a pocket sized case.

These are designed to remove Philips, Slotted, Torx, squared head screws and maybe a few more where a screwdriver will not grip due to damaged heads. The remover sizes are #1, #2, #3 for screw sizes #6, #8, #10, #12 and #14 respectively, ***(see figure 78).***

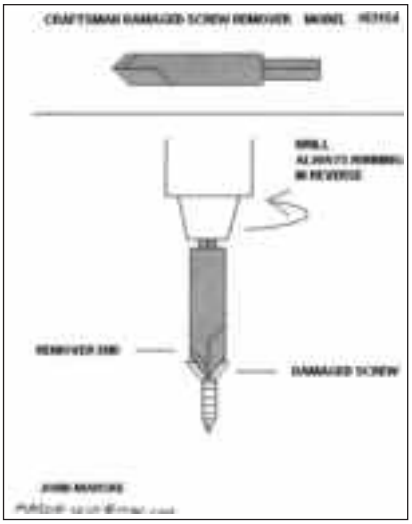

Figure 78.

I have had to use them several times and they are a welcome addition to my toolbox.

There are other versions available for bolts from SEARS and also LOCKMASTERS.

John Marske
California

ACE Retainer Trick

For years, many of us have used the "drill and pry" method to remove the retaining pin on "Ace" type tubular lock cylinders. When faced with re-keying a large number of them, I started looking for a quicker way.

Using a Dremel tool with the standard cut-off wheel, I cut a slot into the pin at approximately a 45-degree angle, ***(see figure 79).*** I start the cut in the body of the lock, 1/16" to 3/32" away from the pin. A shallow cut is all that is normally needed.

Once the cut has been made in the pin, a pry tool is used to remove it. To make a very effective tool I start with an old #2 Philips screwdriver. Near the tip of the tool I grind a notch 1/3 of the way into the screwdriver. The tip of the tool is then rounded, taking care to leave approximately 1/16" of material on the prying lip.

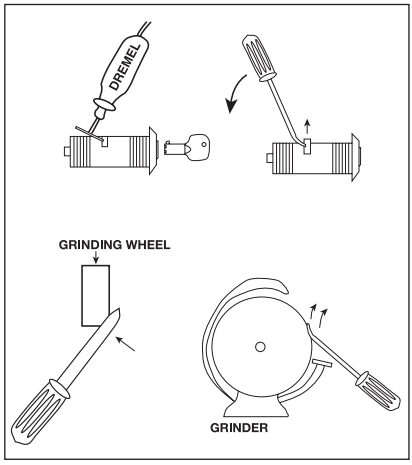

Figure 79.

The rounded tip of the tool acts as a fulcrum against the body of the lock, making the removal of the pin quite easy. The same pin can be reused and will still fit in tightly.

I leave this tool with my tubular keying kits. It saves a tremendous amount of time. It can also be used on some ignitions with solid pins holding in the cylinder. I have had limited success using this method to pry out hollow roll-pins.

This procedure normally takes about 30 seconds. The time needed to make the tool is only a few minutes and I'm sure that you have plenty of worn screwdrivers lying about.

As always, safety glasses are not an option.

Michael Wilkins, CML
New Jersey

Adams Rite Cylinder Removal

On a couple occasions, the mortise cylinder on the Adams Rite latches I was working on, acted as though they were stripped when I tried to remove them. The real problem was the wrong backset being used for the lock, and when the retaining screws were tightened (after the cylinders had been installed) it forced the cylinders against the back edge of the prep in the stile, making them almost impossible to remove. If any of you run into a similar problem, all they have to do is loosen the retaining screws on the lock itself and remove the cylinders with ease.

A really great turning tool for hard to turn mortise cylinders (in any application) is an uncut key blank. After loosening the setscrew, simply insert the uncut blank and turn the cylinder. Beats trying to grip the edge of the cylinder with your fingers and doesn't scar the "scalp" of the cylinder like Vise-Grips would. If the "key" won't turn the cylinder: then try loosening the retaining screws as noted above.

Also, anyone who uses the Slide-Lock or similar "Toyota Tool," should take note that the tool can be modified to open Honda Civics as well. I bent the tip to 90 degrees and used the tool to get into a pretty ornery Honda Civic. Actually, the modified tool could be a hair longer, but it worked well and I can still open Toyota's with it.

David Craig
Illinois

Old Schlage Wafer Rekey Trick

The Schlage wafer tumbler locks have been out of production for many years. However, there are still some of them around. When they were plentiful I did lots of keying and rekeying of them and I devised a set of keys to make that rekeying go faster, ***(see figure 80).*** The keys have seven spaces and only one depth. Each space had the same depth.

There are left and right cylinders as determined by which

Figure 80.

side the tip cut is on, referred to as 10's and 20's which are opposite of each other.

To rekey one of these locks you had to disassemble the complete lock and take the cylinder out of the outer knob. Once I had the cylinder out of the outside knob I would slide key #1 in the cylinder to see if it was a 10 or 20, as soon as I found out which it was I would put that cut on an uncut key blank. I would then insert that key blank into the cylinder and look for wafers that were sticking up above the shear line. If I saw wafers sticking up in the 3rd, 5th and 6th position; I would take the set of keys and use key #3, 5 and 6 and put a cut in those positions. The cuts could be all on one side or some on one side and some on the other, but wherever I saw a wafer sticking up I would put a cut in that position regardless of which side it was on. As soon as you put a cut in each position where the wafer was sticking up you would have a completed key.

If I wished to rekey the cylinder I would move some of the wafers around and use the #1 key to determine where I had to place cuts to get a good working key.

As you notice there are 7 keys in the set, numbered 1 through 7, the number 1 key has its cut in the last position and it is used if the cylinder is a 10 or 20.

Even though this lock was discontinued by Schlage years ago, I thought I might share this trick with you as I have asked locksmiths what they do when they run across these wafer locks and most of them say they replace them because of lack of knowledge about making keys for them.

Ben Marshall, CPL
Florida

Editor's Note: Ben, thanks for the tip. It's been a long time since I rekeyed one of these old Schlage, although we still cut some of the keys occasionally. When I do run across these locks in older homes I recommend that the homeowner upgrade to something better and more secure. However, I can speak from experience when I tell you that there are folks that would rather keep the old locks! Again, thanks for showing some of the newbies how "it used to be."

Unican L-1000 Schlage Removal Trick

I had a customer come in with a Unican push button lock fitted with a Schlage IC core key override and no keys.

While trying to pick the lock, I discovered that the lock had five pins and a thought occurred to me…bump key. I tried a five pin bump key and it worked. Next, I cut a control key to all 9 cuts and filed the ridge down between

spaces 5 and 6. On the third "bump", I had the cylinder in my hand and a happy customer.

I don't think this will work if the lock is a six pin because of the control pin cut, but it sure worked well with a five pin.

Hope this helps anybody with a similar problem.

Reed Harmer
Ontario, Canada

Herman Miller Furniture Lock Trick

I do a lot of work on Herman Miller furniture locks.

I'm sending a sample of one that is commonly found on their horizontal file cabinets. These locks have a pull out core/plug ***(see figure 81).*** It is suggested that to remove the core, you use a hook to release the retainer. I have found a better way to remove these cores than using the hook game.

Figure 81.

Figure 82.

So far, all of these locks start with an "LL" or a "UM" code and have a retainer ring in the sixth wafer position. I create a sixth position on a Y-11 blank by cutting the shoulder back and then shortening the tip so it doesn't extend past the end of the plug.

I file a little in the newly created 6th position—just enough to raise the retainer ring to the shear line. I make two of these keys, one with no cuts for reinserting the plug ***(see figure 82).*** This key will also pull the easy ones. I cut the other one with a shallow trap cut in the first position for the stubborn ones.

So far, they've all succumbed to either one, or the other of these keys. It sure beats bending hooks.

Dennis Gillette
Illinois

Interchangeable Core Plug Repair

Many times when I am working with small format I/C lock cores such as Best, Falcon, Arrow, and many others, I find that the working key will not come out of the cylinder smoothly. This is almost always on one of the locks that has the cylinder retainer plate riveted on.

What has happened is that with wear and pulling the key to open the door, the back of the cylinder housing, along with the retainer plate, has worn down or bent outward. This allows the lock plug to move outward so that the bottom pins are no longer in line with the top pins at the operating shear line. The key will not come out until the holes are in line as the plug is pushed inward at the same time the key is pulled out.

I have found that re-peening or re-swaging the rivets and the retainer plate will return the cylinder to smooth operation. You can spot this condition when you look at the face of the plug and the face of the core sticks out farther than the face of the plug. You must be careful not to crush or deform it as this may make the core unusable.

The lock plug must be supported on an anvil. To make the peening easier by holding the cylinder and anvil properly in place I made the following support: the I/C Anvil. Using an old I/C core of the same keyway, that had to be drilled out, I removed the lock plug. I then cut off the face and about 1/4" of the plug with a hacksaw. I used a belt sander to get this disk perfectly flat and smooth. I inserted an old key that I shortened to about 5-pin lengths and soldered it in place.

To fix a worn cylinder as described above, simply place the I/C anvil in your vise, slip the worn cylinder onto the key and anvil, and carefully peen down the retainer. This idea can be used on I/C cores that are either empty or pinned. After realigning the plug with the rest of the core, lubricate and the cylinder will operate like new.

Make a different I/C anvil for each different keyway lock as needed.

James Moorman
Texas

Lock Coding Trick

When I rekey a lever set on a door, I take the inside rose cover off and with a permanent pen, write the cuts of the key (coded of course) on the inside of the cover plate and put the rose and lever back on.

This trick has helped me several times to make keys to the lock when the keys are lost, or misplaced by a manager or tenant.

If the door is locked I use the KEEDEX lever opening tool to open the door, read my code, make a key, remove the lever and

rekey it. It sure beats picking those pesky lever sets.

Chris Shook
Tennessee

Everest Trick

Some Everest blanks (non-Primus) have sort of an undercut milling on one side. The problem is that the keyway has a corresponding broaching that can easily be distorted or damaged by trying to insert the key into the keyway either too high or low.

If you get a call concerning an Everest key that suddenly will not enter the keyway, simply take the appropriate blank and hold it in the proper position to insert it in the cylinder. Strike it sharply with a lightweight plastic mallet or wooden hammer handle.

The blank will reform the keyway with no damage. A pick can be used to make sure that no debris remains in the keyway.

Leo Meres
Florida

Cutting Screws and Bolts

Sometimes I have to shorten a screw or bolt and usually use my bolt cutters. Recently I had to shorten a few screws and didn't have my bolt cutters with me.

Normally, I'd use a hacksaw but this time I chucked the tip of the screws into my drill. I turned on the drill to rotate the screw and held the screw against the blade in my hacksaw.

Before long, I had a neatly cut screw. It helps to slide the rotating screw slowly back and forth along the blade. It's best to use the extreme ends of the blade, which don't normally get used and are the sharpest, even on a worn blade.

Ted Swirsky
New Jersey

Kwikset and Murphy's Law

The call was simple enough. Rekey two Kwikset key-in-knob cylinders. I used my A-1 Quik Pull to pull the first cylinder and replaced it with a ready-keyed cylinder from my stock on the truck. Just a few minutes more and I'd be on my way to my next job, right?

I used my A-1 Quik-Pull on the second cylinder and snapped the blade on the tool. I put a new blade on the Quik-Pull and tried again. The cylinder wouldn't budge. I took the knobset off the door, pulled the spindle, inserted a Kwikset removal tool and bent it trying to get the cylinder out.

I got another tool out and tried again. No luck.

I told the customer that if I couldn't get the cylinder out, I was going to have to replace the knobset. He said that wouldn't be a problem and the cylinder probably wouldn't come out because it "fell" out one day when he unlocked it, he tried to put it back in and it wouldn't stay. He said his son Super-glued the cylinder in when he came home from school.

I got a new lock out of the truck, keyed it to the new key and left. This "simple" job took me nearly an hour more than it should have because I kept "trying" to get the cylinder out of the knob.

My tip? Don't waste time trying to do something the "normal" way if the normal way doesn't work the way it's supposed to. After several attempts to remove the cylinder, I should have realized that something was not right and offered to replace the lock. As it was, I lost money (even with the sale of the new Kwikset).

Kelly Johnson
North Carolina

ILCO Tubular Key Modification

I recently acquired and refurbished an old Ilco 381D tubular key machine. This device can cut Ace-type keys by code or duplication if the original is first decoded. It is similar to the earlier Ilco 181D and Keil No. 9. All of which are no longer in production, but were made for decades and many are still in daily use. ***(See figure 83.)***

On this machine the depth of a cut is determined by turning the Turret Stop (depth nut), until the desired depth number appears under the cut position pointer. You then move the blank into the end mill cutter by pulling the feed handle to the left. In this respect, it operates much like the venerable Framon #1 and #2 code machines.

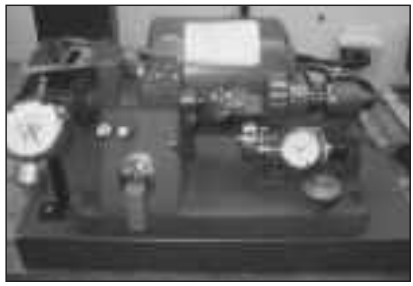

Figure 83.

We soon discovered that the depth numbers incised into the turret stop were not quite accurate for Chicago Ace depths and that other manufacturers such as Fort use slightly different depths of cut in their tubular locks. To alleviate this discrepancy, we came up with a simple solution.

I mounted a small machinists dial indicator to the Ilco in such a way that the position of the turret stop is now displayed to within .001" accuracy. The stop can now be set to the precise depth of cut desired without any guesswork.

The indicator selected has a dial diameter of about 1-1/2" and a measuring range or travel of 0.250" with the continuous analog dial reading 0-100 in 0.001" increments. The indicator was slightly modified by inserting a small compression spring under the stem cap. In this reverse application the cap presses lightly against the back of the turret stop and very accurately reflects its movement when turned. The contact point on the bottom of the indicator, usually used for measurement, is not utilized.

The dial indicator is retained with a 6-32 set screw in a 3/8"

ID bronze flange bearing, pressed into a small steel "L" bracket, which is bolted to the turret casting of the machine. This single drilled hole is the only modification to the key machine itself. To make a cut, the turret stop is first turned to the start position and the dial indicator zeroed by rotating the bezel. As the turret stop is turned, the exact depth of cut can be read on the dial indicator face. Once the desired depth is set, just pull the feed handle to make the cut. The indicator used—Enco import model 605-4010—was sourced from the www.use-enco.com web site for under ten dollars. The other dial seen at the left of the machine is a Framon #TKMS451 which is not necessary, but we added it to more accurately decode original keys and check for machine accuracy of cut duplicates.

We use these depths for Chicago, Ace and American: 1=.015, 2=.031, 3=.046, 4=.062, 5=.077, 6=.093, 7 =.108.

And these for Fort Gem and Apex: 0=.017, 1=.033, 2=.048, 3=.064, 4=.079, 5=.095, 6=.111.

Peter P. Schifferli
New York

Rolling On

As I read your November column, I was reminded of a use that I have for plastic rod in roller form.

In my part of the country I find a lot of Roller catches.

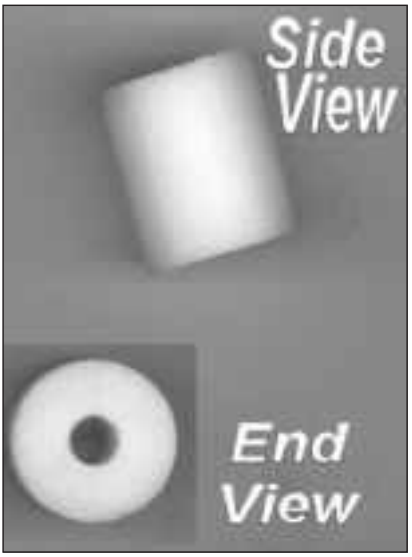

Figure 84.

Many have a rubber roller that will harden and crack with age and exposure to the extreme summer heat.

I use a 5/8" diameter plastic rod (Sold by ENCO—1-800-USE-ENCO) called Natural Acetyl, or Delrin.

I cut a piece that is 3/4" long, and drill a #10 hole through the center. ***(See figure 84.)*** Then I simply place the new plastic roller on the old roller catch and charge accordingly.

My "repair" costs considerably less then a new latch would.

Bill Weingard
Arizona

Mortise Cylinder Removal Tool:

We have all encountered the stubborn mortise cylinder that practically refuses to come out of the lock. On Adams Rite locks, I loosen the mounting screws to

Figure 85.

see if that loosens the cylinder any before resorting to more aggressive measures.

On gate locks and hollow metal doors, there's often little choice but to get out the Vise-Grips® or Chanelocks® and twist the cylinder out of the lock. Of course, you frequently end up damaging the cylinder face (or ripping it right off!)

I modified an old pair of Vise-Grips® that allows me to remove those stubborn cylinders without damaging the scalp, or cylinder. I simply used a round file to file down the teeth on the Vise-Grips. ***(See figure 85.)*** Works like a charm.

Larry Bors
Oklahoma

Schlage D Series Lock Nut Tip

How many times have you gone to service a Schlage D lock and found that the locknuts were too tight to loosen by hand with

Figure 86.

the regular Schlage tool? And then you have to go back to your van and get a large pair of slip joint pliers or a pipe wrench.

A simple way to take care of the problem is to drill a 5/16" hole through the locknut tool and simply insert a Phillips screwdriver. ***(See figure 86.)*** The screwdriver acts as an extra handle and will loosen the tightest nuts.

Steve Shields
California

Kwikset Deadbolt Switch

When it is necessary to replace just the bolt on a Kwikset deadbolt, you may encounter a problem. Early models had a "small D" shaped hub, matching cylinder connecting bar and thumb-piece tail. The improved current style uses a "large D" shaped hub with a hollow torque blade on the outside cylinder that accepts a mating solid tailpiece on the inside cylinder or thumb-turn. If you try to replace the older bolt

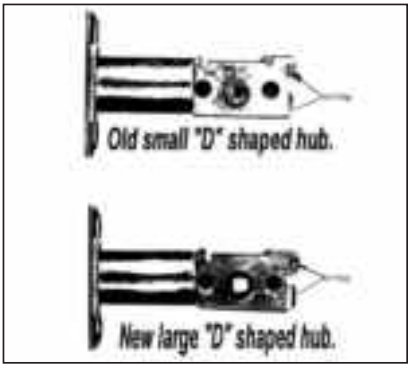

Figure 87.

with the new style you will find that the "small D" tailpieces do not work in the "large D" hub! ***(See figure 87.)*** There are two relatively easy ways to overcome this problem, short of replacing the entire lock set.

1. If you have an old style bolt with the "small D" available you can easily swap the bolt crank with that on a new latch. Just squeeze the crimp together on the tabs on both sides of the flat plate and pry apart. Then switch bolt cranks and re-crimp the tabs.

2. You can make a simple adapter, which will allow the "large D" hub to accept the "small D" tails. Take a short piece of a rim cylinder or key-in-knob tailpiece and tile or grind down the width so that it fits against the flat in the "large D". Use a drop of epoxy to anchor it in place and you will find that the "small D" parts will now fit perfectly. The thickness is just right to fill the gap in the "large D" bolt crank.

This may come in handy when you need to match a particular backset, finish, or front, or wish to maintain the same keying and find you require an obsolete "small D" replacement. These same bolts are also used on some Kwikset-made Corbin, Russwin and Emhart branded deadbolts.

Peter P. Schifferli
New York

Bypassing a Sargent 4870 Auxiliary Deadbolt

Here's a simple way to open one of these locks if the cylinder refuses to pick or the lock has a high-security cylinder in it.

Drill a 15/64" hole exactly 1" down from the center of the keyway of the cylinder. ***(See figure 88.)*** This hole will put you right on target and expose the thumb turn actuator in the lock case. Simply insert a flat bladed screwdriver in the slot, turn the actuator, and the door is unlocked.

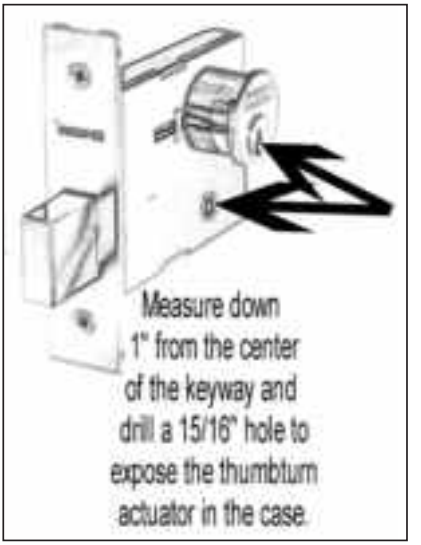

Figure 88.

The 4870 is a non-handed lock, so the actuator will operate from either side of the case. That's the weakness that allows you to bypass this style lock.

Michael Maldonado
New York

Editor's Note: Michael, this is a good tip. My only concern is the repair to the door. If the door is metal, any number of ways presents themselves to repair the door without too much difficulty. However, if the door is a finely finished wooden door, drilling a hole in that door might cause your customer some anxiety, since there is very little you can do to repair the hole without it being noticeable. I think rather than drill an expensive wooden door; I might discuss (with the customer, of course) the practicalities of drilling the cylinder, instead. Anyway, thanks for the idea…it does have applications.

Shimming The Follower

When rekeying certain key-in-knob sets, I sometimes run into cylinder plugs that are not squared off at the end. Sometimes the end is oval shaped (as with the Schlage "F:" series) and sometimes it is sloped like with Titan and many Kwiksets.

I've found it can be a nuisance trying to use a standard follower to push the plug out of the cylinder, as it often jams into the driver (top) pins, stopping the follower in its tracks.

To avoid this, after I've rotated the plug with the key, and before I insert my follower, I insert a shim between the plug and the cylinder and then place my follower against the rear of the plug, but under the shim.

When I push on the follower, the follower slides easily under the shim, the drivers stay in place and I accomplish that rekey much quicker. When I have the plug out of the cylinder, I simply leave the follower in place and remove the shim.

Mike Moriarty
Florida

Originating a TriMark Trailer Lock Key

The new TriMark trailer locks have a deadbolt lock and a locking lever handle set. One key fits both locks. I have found that the deadbolt lock is the easiest lock to use to make a first key, since the lever handle cylinder is riveted in place.

Figure 89, shows that the cylinder in the deadbolt picks to the right one-half turn. The reason you have to pick the plug to the right is so the retaining wafer, which protrudes from each side of the plug, can fall into a slot that allows the plug's removal.

Insert a pick like a diamond under the sixth wafer and move the retaining wafer to the left to release the plug from the cylinder. Once you have the plug in hand, the rest is relatively simple.

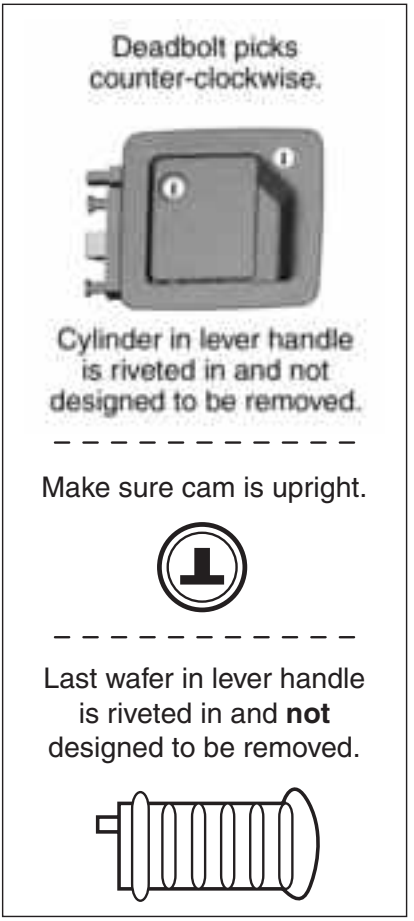
Deadbolt picks counter-clockwise.
Cylinder in lever handle is riveted in and not designed to be removed.
Make sure cam is upright.
Last wafer in lever handle is riveted in and **not** designed to be removed.

Figure 89.

This is a double-sided plug with a double-sided key and both sides of the key have the same depths.

As can be seen in the illustration, when inserting the plug, make sure that the cam in the lock is pointing up so it can engage the plug.

Then simply reassemble the lock and you're in business.

G. R. Lazich
Wisconsin

Telephone Lock Opening Trick

In my area, there seems to be a lot of privately owned pay phones that belong to companies that have gone bankrupt and have abandoned the phones. Many of these phones have ABLOY locks on them and they have to be opened to remove them or make keys for.

The easiest way I have found is to use a Dremel tool with heavy-duty cut off wheels to cut the face of the lock. Cut two slots (5/8" to 9/16") up from the "B" in ABLOY. Make the cuts as shown in ***figure 90.*** Then use a punch to knock out the piece cut.

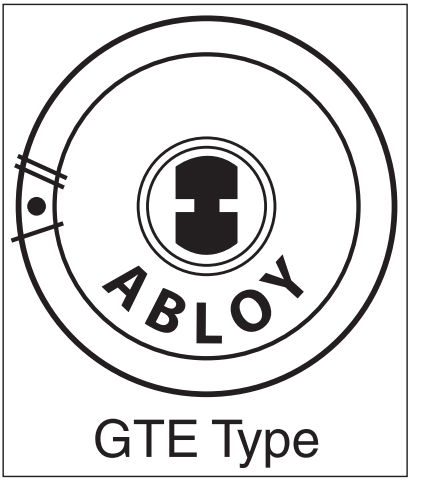

Figure 90.

Once the piece is removed, it will expose a small diameter pin. Remove this pin and you can rotate the lock to open.

Then all you have to do is replace the lock.

Dan Stacey
New York

Kwikset/Yale Conversion

One of my regular bank customers wanted a key made to a lock that had none. When I arrived and looked at the lock, I discovered that it was a Yale with a GC keyway. Of course, I did not have a blank in my van.

Not wanting to drive over seventy miles round trip to get the proper blank, I took the plug to my truck and started trying to fit different blanks into the keyway.

Surprisingly, I found that with a little modification (I ground off a portion of the bottom of the key) a Kwikset blank worked!

The broachings were almost perfect. Its not the right way to do it, but it got the job done. I told the bank personnel what I did and that I would bring the proper blanks the next time I came over that way. They were happy to get a working key made and were willing to wait for the proper key the next trip.

Jess Tom
Iowa

Editor's Note: Jess, I've always said that when you are in the field you often have to make do with what you have to work with. Judging from your tip, you did exactly that. However, I'm curious. I compared (Ilco Key Catalog) a KW1 blank and a 999GC. Although I can see where with a little modification you could possibly make this work, I'm wondering about the differences in height and also the broaching differences between the two. I do know that many times, you can substitute various blanks for others. However, this is the first time that I have heard of substituting a Yale number with a Kwikset. Oh, well, Jess, you apparently made it work. Thanks for the tip.

A Custom Restricted Keyway

An apartment complex I was called to service had hundreds of Schlage cylinders in various keyways. They were all keyed to different systems, and the person I was doing work for had access to only one portion of the complex.

He needed a security room locked with no possibility of any other key in the complex able to access that room. Since there were no bitting charts available, I informed my customer that there was no way I could generate a combination that would be guaranteed to prevent one of the other keys from operating the lock. I suggested using a different brand or a restricted system, to no avail. The customer wanted to stay with Schlage.

After thinking about it for a while, I removed the plug from the lock in question, drilled a small hole opposite the 4th chamber and perpendicular to the keyway. I inserted a small brass pin in the hole and allowed it to protrude into the bottom of the keyway.

Next, I filed the bottom of the key back far enough to allow the tip of the key to pass the "stop pin." ***(See figure 91.)*** In effect, this created a ward that kept any

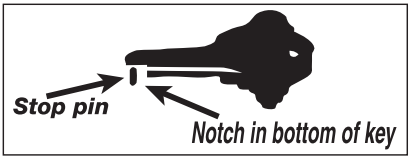

Figure 91.

other key from fully entering the cylinder and operating the lock.

Steve Shields, CPL
California

Get A Grip On ACE® Locks

The longer I'm in this business, the more difficult it seems to do certain things. Like hold on to an ACE lock and service or pick it without my hands protesting too much.

I decided that I needed a third hand that would take a little of the strain off my fingers and make my job a little easier.

Figure 92, shows how I used some garden-variety clamps to do what I needed to do. These clamps are available almost anywhere, have good heavy-duty springs in them and are easy to hold while working on an ACE cylinder.

Also, the vinyl ends grip the cylinder without damaging the threads and keep it from turning while servicing. The vinyl sleeves on the other end of the clamps make them more comfortable in the hand.

Figure 92.

I've also found other uses for these clamps. Like holding push plates in place. Keeping a kick plate from moving until I secure it to the door. Or, clamping things to my workbench while I drill them.

Lyle Hensley
California

Child Care Gate Latch Fix

The director at a pre-school had trouble keeping a gate latched that divided the children's play area from the parking area. Of course that created a safety issue for the children and opened the school up to potential liability should one of the children wander out the gate.

The gate was set up with an intercom, an electric strike, a storeroom function knobset, a deadbolt and a door closer that were all functional and working properly.

The gate latch was located near the top of the gate and well out of reach of the children. However, although the closer operated properly, the gate latch would not catch. Obviously, the latch's proper operation is critical to the safety of the children as it prevents the children from simply turning the knobset and exiting the playground area.

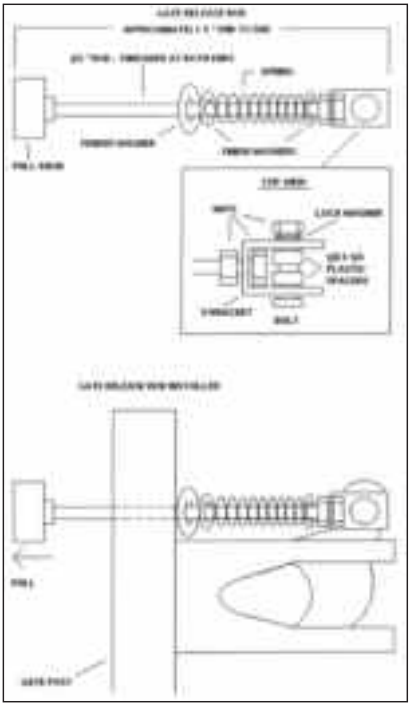

Figure 93.

My challenge was to solve the latch problem while maintaining the current locking setup with the existing hardware.

The gate latch was welded to a square tubular frame, with holes drilled through it to accommodate a cable release that was no longer used.

I solved the problem using a modified car battery hold-down rod. I designed a spring-loaded rod, which forced the gate latch to drop into place and catch as it was designed to do.

I affixed a small knob to one end of the rod and inserted the rod through the existing hole in the gate's frame. Then I assembled the washers, spring, nuts, lock washers, spacers and a bolt to the rod with the "U" bracket. Spacers connected to the gate latch lever. ***(See figure 93.)***

A slight adjustment on the closer allowed the gate to close properly and the latch to catch the keeper on the gate.

John Marske
California

Editor's Note: John, I'm assuming from the drawing that there is a short round rod with a ball on the end of it that sits behind the latch when the gate closes. I'm also assuming that the latch will swing inward from the pressure of that rod and drop down behind the rod, thus securing the gate. From your illustration, the spring on your modification will force the latch down when the knob is pulled from the inside. This brings a question to mind. Does your arrangement have a second spring on it to cause the latch to drop when the gate closes or is the spring attached to both the post and the latch to act as a "pull" when inward pressure is put on the latch and the rod clears the tip of the latch allowing the latch to drop?

You're approach to solve the problem for the pre-school is unique and from a creative standpoint, I think it is outstanding. I only have one major concern and that is the Life Safety issue. Since there is already a storeroom function lock and a deadbolt on the gate, plus the latch you mentioned, does this gate's locking mechanisms meet code?

For future reference, John, DETEX has an alarmed exit device (Wetlock ECL-8010W

Exit Control Device) specifically designed for applications on exterior gates. It may, or may not have been appropriate for this application.

Corbin Mortise Opening Tip

A non-functioning bolt on an apartment door with a Corbin mortise lock and cylinder made it necessary for me to drill for the cylinder retaining screw at the 3 o'clock position. After cutting through the screw with my drill, I unscrewed the cylinder and manipulated the bolt back with the tip of a long screwdriver.

After getting the door open, I looked for a cause for the lockout and noticed that the door, around the mortise lock, was bulging outward. Apparently, the door and been forced open during an earlier break-in. The lock was loose in the cutout and wobbled a good bit.

I took the lock out of the door and found that because the lock was loose and apparently vibrating when the door was closed, the housing or cover plate screws had loosened enough to allow the cover to move, causing the bolt retractor to come out of it's slot and malfunction.

I reassembled the lock, inserted a new retaining screw, put the cover plate back on and used a little Loctite® to help prevent the screws from loosening again and put the lock back on the door.

Although I did not have one on my van, I suggested that the customer allow me to order a mortise lock reinforcing wrap-around plate from MAG, which would cover the damaged area of the door and prevent the problem from reoccurring.

David Craig
Illinois

Notes

Door Prep Tool Tip

Have you ever gone to a job to install a lock only to find the hardware that was there had a hole that was either to small or looked like it was cut out with a screwdriver? Here is a simple solution.

Take a 1" wooden dowel and cut it 6" in length. Next drill a 1/4" hole, one inch from the end—making sure the hole is straight, ***(see figure 94).*** Now measure a 23/8" backset from the center of the hole you drilled and make a mark. Then measure 23/4" backset from the center of the hole and make a mark.

Place a tubing cutter on the 23/8" mark Rotate the cutter all the way around the dowel to make

Figure 94.

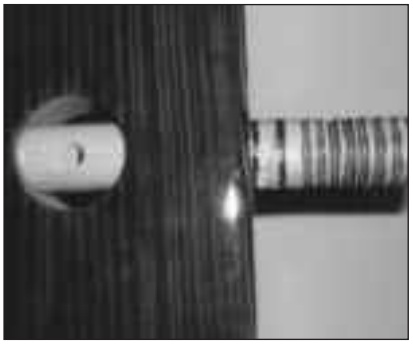

Figure 95.

a groove. Then do the same thing at the 23/4" mark. Use a magic marker to trace a line around each groove to make it stand out.

When the dowel is inserted in the edge-bore of the door position, Use the highlighted grooves to determine the location of either 23/8" or 23/4" backset, ***(see figure 95).*** Insert your pilot bit for your hole saw in the 1/4" inch hole on the dowel as a guide. Hold the protruding end of the dowel with your hand while drilling the hole on the surface of the door.

Rick Rogers
Colorado

Double "D" Cutout Tip

If you don't have a double "D" punch and need to install a desk lock in a metal cabinet, use this simple method. Buy self-adhering metal backer plates with the double "D" hole (I get mine from Hawley).

Then, make this handy little tool from a 3" to 4" piece of 1" dowel rod. Turn down 11/2" of one end to a 3/4" diameter and trim the two sides to the double "D" shape. Drill

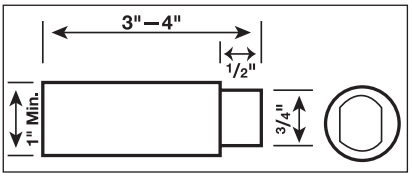

Figure 96.

a 3/4" round hole in the cabinet, insert the trimmed end of the tool through the bole and slide the plate in place over the trimmed end from the back side, ***(see figure 96.)***

I rubbed wax on the trimmed end to keep it from sticking to the plate. Just before you let the adhesive-side touch the metal surface of the door, square the plate by turning the dowel as necessary. This seems to work better for me than trying to use the lock itself to align the plate.

Bob Roman
Maryland

Great Cover-up TIP

It is sometimes necessary to replace or reposition a strike plate in a wood door frame which then exposes part of the original mortised cut-out, necessitating the use of spackle.

I have found the following process produces a professional looking job. First, I neatly apply masking tape to the re-installed strike plate, just as if the door frame was going to be painted. Next, I apply Spackle as necessary (slightly higher than the finished surface to allow for sanding since most spackle shrinks as it dries).

Now this is the important part: before the spackle completely sets, I carefully outline the strike plate using a single edge razor blade or chisel, creating a very slight uniform gap between the spackle and the perimeter of the strike plate.

In this way, once the Spackle is ready for sanding and painting, the strike plate can be removed without the Spackle sticking to it and breaking off. Not only that, the finished job looks much like an original installation and doesn't appear to be spackled.

George Kenney
California

Potpourri—Four for One

This is a compilation of tips from the last few jobs I did.

I had to install an electric strike to a rosewood door. Not wanting to damage the door and to cover any possible slips, we checked with maintenance and found they had some of the original stain for the door. We touched up all marks before we started and then stained the edge of the strike prep so that no raw wood was visible when the strike was installed. The result was a clean low visibility install.

On an installation to a Duronodic frame, we touched up the edge of the cut outs with a black "Sharpie" magic marker. Again no raw aluminum was exposed and the install looked a lot cleaner.

When installing small diameter Ilco, Timberline, or ESP furniture locks where there is no trim collar, drill the face of the material with a 5/8" Forstner bit to a depth of 1/8". Then, counter-bore from the back of the drawer/door with a 11/16" or 3/4" Forstner bit. Touch up the

edges of the cut with black marker and install the lock. The face is a nice close fit and no raw wood is visible.

In each of the above cases the customer was extremely pleased with the effort we took to do a clean install.

Martin Brown
Canada

Dead-on Deadbolt Strike Locator

In this area I get a lot of calls to install deadbolts in existing hollow metal doors/frames. To assure a good fit and smooth bolt throw, I made a marking device from an old deadbolt latch (one without the hardened insert).

I cut about 5/8" of the tip off a hardened nail to use as my scribe. Next, I drilled a hole into the dead center of that bolt just slightly more than 1/2" deep, so that slightly less than 1/8" of the point will stick out of the end of the bolt, then I epoxy it in place.

After prepping my door edge with a Squeeze Play or Major Manufacturing's Lock Mounting Brackets, I install my modified bolt. With the door properly seated in the frame, I use a straight-blade screwdriver to throw the bolt until it hits the metal jamb. While holding tension on the screwdriver, I gently pull the door open about 3/8", and then turn the bolt back to the unlocked position.

When I open the door there is a small scratch mark on the frame, starting at the center of what will be the strike hole. At that point, I drill a 1" hole on the center point, install a thimble strike and have a perfect fit for the new deadbolt. This works equally well on wood doors and frames. On frames filled with mortar, save your hole saw by cutting only until you have the metal cut, then finish the hole with a masonry bit.

Bob Roman
Maryland

Changing a Von Duprin 22 Function

A customer requested that I provide them with a night latch function on an entry door that had a Von Duprin 22 series outside trim lever on it. Repeated calls to my suppliers and others netted me the information that Von Duprin did not make this trim in a night latch function.

The hardware on the door was in good condition and although new trim would have been expensive, to convert the door to another trim (or type of device) would have been very costly, and the trim would not have matched the overall trim on the doors of the building.

Since a solution was needed, I decided to see if I could find a simple and practical way to convert the existing trim to a night latch function, without compromising the security of the door.

Here's my solution:

I mounted a Corbin mortise cylinder tailpiece upside down on the mortise cylinder as can be seen in the ***figure 97.*** At first the key operated a little on the rough side when I tried to withdrawal the latch.

Figure 97.

Using a round file, I opened up the indentation on the tailpiece so that the trim actuator seated more precisely in between the center leaf of the tailpiece and the outer left (looking from the front of the lock) leaf. That modification allowed the key to work smoothly.

The key turns about 20 degrees and pulls the trims lock works into the unlocked position. The short side of the tailpiece traps the key from going any further. The person entering through the door then has a free hand to rotate the lever and pull the door open. When they remove the key the lever is pushed back to the locked position by the center leaf of the tailpiece, which also prevents the key from rotating any further.

This modification has been in operation on a very high traffic door for about two months now. So far it has not given the first sign of failure or operational problems.

Mark Rankin
California

Lock Down Your Van!

That hockey puck lock-style lock is fine for the back doors of my service vehicle, but I never wanted to put one on the sliding door of my van. It takes a little more effort to use, but I've found a new use for a steering wheel lock. It can be used to secure the slider from the inside.

Most cargo vans have many access ports (holes) in the interior skin of the walls and door. Simply insert one end of the steering wheel lock into the fixed wall, the other end into a hole in the door. Once locked in place, the Club will hold the sliding door securely fastened.

This method is great when parking your van in high-risk areas. It also provides extra security when your van is in for service without the need to rekey the slider.

Steve Zemba
California

A Major Faucet Fix

Jake, I was reading the tips in the December issue and read the one from the North Carolina locksmith about how he solved a problem for a customer regarding the theft of water from the outdoor faucets. It reminded me of a similar problem I had a few years ago and how I solved it.

A construction company was building a house next door to mine.

When I left for work one morning a cement crew was pouring a slab for the garage. When I got home later that night I discovered that the crew had used the faucet on the side of my house to wash off their tools. There was dried cement splattered all over the siding and foundation of my house around the faucet. Since they still had to pour the driveway, I needed to find a way to keep from having a repeat of the incident. I thought of taking the faucet handle off, but knew that it could still be turned on with a pair of pliers.

I used one of Major Manufacturing's Kee-Bloks, snapped it over the faucet handle and the top portion of the faucet and locked it in place. It was a perfect fit! This solution may not work on every faucet due to the difference in design, but it sure was an easy fix for me!

When I returned home that evening the driveway was finished and the crew was washing tools in the street using water from the cement truck. I guess they got the hint.

Mike Neely
Iowa

Cobra Installation Tip

I think I've found a short cut for drilling the wiring hole for the Schlage Cobra locksets.

This lock will fit a standard prep to a cylindrical lock, but the wire from the power pack and the through bolt has to be drilled to be ran through the door.

To determine the drill point, simply use the shim that Schlage provides with each lock as a template. Place the cylindrical cutout accurately over the door's prep and then mark the drill site for the wire pass-through. ***(See figure 98.)***

Figure 98.

It takes all the guesswork and measuring out of the installation.

Dan Corner
Florida

Bypass Tip for Simplex 5000

I have a drilling tip for the new 5000 Series, Kaba/Ilco push-button lock. If you find yourself locked out of this unit all you have to do is drill the "ENTER" button. If you drill between the T and the E you will miss the screw holding the button together to the lock case. As you drill, watch the shavings as they come out. They will start as aluminum and then come out as plastic. If you see brass, you have gone too far.

Right behind the ENTER button are two actuators one on the left is

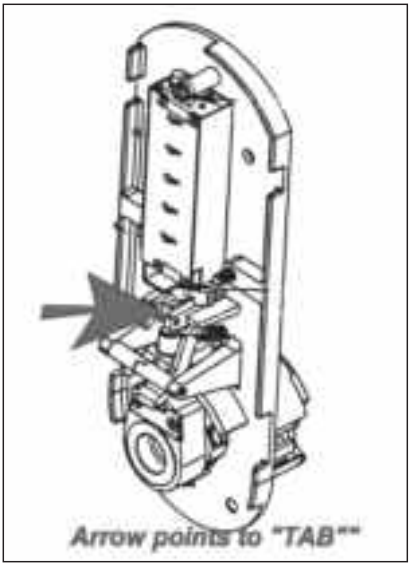

Figure 99.

for the combination chamber, you don't have to worry about that one. ***(See figure 99.)*** The one on the right will drop a piston like unit into the handle assembly, allowing you to open the door. That's the one you want to push.

William Walker
Canada

Staking Latch Face Plates

Here's an easily made tool for "staking" the faceplates on certain latches where these are furnished loose. Examples are the Schlage triple-option, Arrow C-series (Comet), SecurityPro 5080 series and certain GMS and Kwikset latches. The tool is made from three parts:

1. Installation tool for 1/4"-20 E-Z Lok threaded inserts.

2. 1/4" hex and 3" long power bit extension.

Figure 100.

3. Head from a 5/16" Allen cap screw.

Begin by filing or grinding the drive wings on the installation tool to about 30 degrees as shown in the close-up. ***(See figure 100.)*** These can be sourced from woodworking or industrial suppliers. Next cut the head off a 5/16" (1/4" hex recess) Allen cap screw and grind the cutoff portion smooth to serve as a striking surface. Since these are hardened, the use of a cutoff wheel in a die grinder or Dremel-type rotary tool will expedite the task. Finally, assemble all three parts as shown and braze together. Epoxy could be used if you don't have brazing capability. ***(See figure 101.)***

To use the tool, simply place the desired face plate on the latch, invert over a hardwood block, insert the tool and give it one sharp rap with a 16 oz. ballpeen hammer in each of the two screw holes to permanently attach the front.

Peter P. Schifferli
New York

Figure 101.

Deadbolt Drilling Jig

I have had to drill a couple of deadbolts recently because of bolt problems. On the first one, I looked at the lock and drilled two holes. I guess the force was not with me because it took a third set of holes before I hit the mounting screws.

To prevent this problem in the future, I took an old deadbolt and laid it on my workbench. I drilled a 1/8" hole through each mounting screw hole location all the way through the lock. I then pried off the scalp. With a little reshaping and filing, I had a marking template that would not cut me.

On the next deadbolt problem, I took the template and held it up to the lock. With a center punch, I "popped" the hole locations, drilled the two holes and the lock was off.

Gregory R. Koonce
North Carolina

Using Schlage Jig To Prep A/R Mortise

Last month I was asked to install a couple of Adams Rite 2331's on a wooden door. Since I don't own a jig for doing mortise lock preps, and I don't really have the call to buy one, I improvised.

I had no desire to free-hand the holes required for the mortise cut prep to install the lock, so I marked out the edge of the door where I wanted my preps to be. Then I got out my trusty Schlage installation jig (I'm certain other jigs will work with this technique), and used it to create the edge bore by drilling a single hole. Then moving the jig up about 3/8" and re-clamping it, I drilled another hole, overlapping the first. I continued moving the jig up until I had the right height for the prep. At that point, I simply used a chisel to clean the edges.

I drilled my cross bore, and installed the lock. I'm sure this technique saved me tons of time, and was far more accurate than it would have been had I simply free-handed it.

Dave Rider
Ontario, Canada

Template Holder for Metal Doors

When installing a Trilogy T2 lock on a metal door for the first time, it was a little rough having to set the template up to make sure everything was level and square. I started out with C clamps, but when I had to make an adjustment I had to use both hands to loosen the clamp and then move the template.

Looking for a better way of doing this, I grabbed a magnet that I had in my toolbox and just placed it on the template. After a few minor adjustments and after making sure everything was level and square, I used my automatic center punch to mark the drill points and everything went smoothly for the installation.

Frank Kitchen
Indiana

Cut In Strikes Fast Without Splintering

I guess all of us were taught that when installing new locks to cut in strike mortises with the trusty

hammer and chisel. I did it for years. Tired of occasionally splintering some old wood and chipping paint, I tried a small router. I made a jig to go over the jam and then cut the hole for the new strike. That worked, but it was time-consuming, and the round corners still had to be cut with a chisel.

Recently I discovered that Dremel makes a 1" diameter saw blade that mounts on a standard mandrel. That did it. I made an aluminum template, slightly smaller than the standard strikes on the Schlage "D" locks, placed it in the correct position; and then ran the saw blade all the way around. After the outside was cut, it was a simple matter to clear out the opening with a chisel.

The fit was perfect—there were no splinters, and the paint wasn't even chipped. Total time to cut in the strike mortise is about three minutes.

Steve Shields, CPL
California

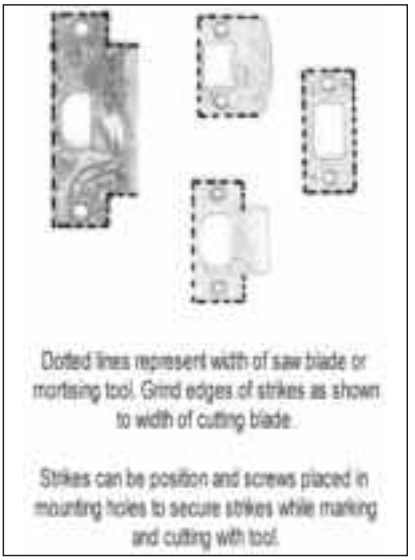
Dotted lines represent width of saw blade or mortising tool. Grind edges of strikes as shown to width of cutting blade.
Strikes can be position and screws placed in mounting holes to secure strikes while marking and cutting with tool.

Figure 102.

Editor's Note: Steve, thanks for the tip. I would like to mention that "prepping" a strike mortise as you describe could definitely save time and effort when cutting for strike. Especially on heavily painted doorjambs, such as might be found in older homes. For those who might like to make their own template, they can utilize any spare strike plate they might have in their "junk box" and carefully grind the edges of that strike down to whatever dimensions they need for the particular saw blade they use. ***(See figure 102.)*** Also, for those who may not be aware of it: a sharp chisel with a straight cutting edge works best under most circumstances.

Crossbores and Key Extractions

When I come upon a door with the wrong sized hole, or one that is not properly located, I use a boring jig to correct it. If the door has fancy trim (I hate those), I use scrap wood to build up the space so that the boring jig fits. If that makes the adjustments on my jig too wide, I put a spacer under the leveling screw to get a proper fit. If that is not possible, I use C clamps to secure scrap pieces of wood to both sides of the door (don't want to mar the door) and use a template, and hole saw. There is always a way.

I came up with a real killer extraction tool for broken keys. I can only describe it, as I have no scanner to send a picture of it. It consists of a piece of spring steel about .050 by .020, and about four inches long. The tip looks like a hook type broken key extractor, except that the tip is rounded.

It works best when both parts of the key are present. With the

"head" end in hand and the tip in the lock, I put the remains of the key into the lock and slide the tool along one of the grooves with the hook side facing the nearest edge of the key. When it gets to the tip of the broken part, it will lock on like a bulldog. Push in on the head of the key, pull on the tool, and pick the tip of the key off the car floor.

It really does go that fast. If the bow of the key is not available, an uncut blank can be sacrificed as a guide to the groove and to raise the tumblers or wafers. I have also used Weiser shims, which I have shaped like a knife to raise tumblers.

I have only used it twice, and surprised myself both times. It just seems too easy.

Ed Roberts
California

Squeeze Play Tip

Sometimes when using the Squeeze Play to mortise a hollow metal door, I wind up with a "dimple" in one corner of the mortise, or a slight dimple along one edge. I have found a way to prevent that from occurring.

I use two carpenter's clamps and two pieces of plywood. ***(See figure 103.)*** I mount the Squeeze Play, make sure it is aligned properly and snug it down. Then I place a piece of plywood on each side of the door in line with the Squeeze Play and tighten the clamps down to hold them in place.

Then, I simply remove the clamps and plywood and take the Squeeze

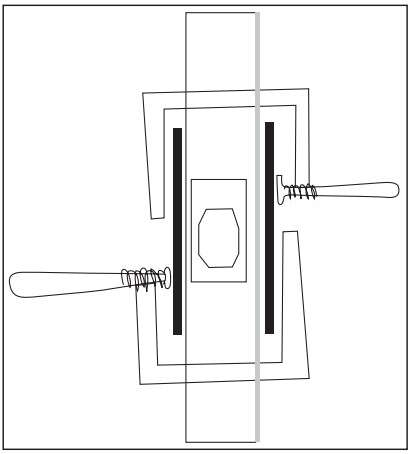

Figure 103.

Play off the door and have a nice clean mortise with no dimples.

Sol Follman
New York

Protected Back Strike Tip

Both Sargent (Part #804) and Yale (Part #431) make a Protected Back Strike. These strikes provide extra security against forcing the latch bolt out of the strike. ***(See figure 104.)*** They also serve as a stop on double doors that are not rabbeted. They come in a 1-3/8", and a 1-3/4" configuration for the two most popular door thicknesses.

I have found a unique use for these strikes that has helped me immensely when it comes to installing deadbolts on doors such as Stanley's residential doors that have the crush (foam or rubber) weather-stripping.

Usually when I install a deadbolt on these types of doors, no matter how carefully I align my deadbolt strike hole and plate, the door will shut, depress the foam or rubber weather stripping and the door

Figure 104.

will slam lock. That is, the anti-shim device on the latch will snap into the strike hole because of the give in the weather stripping.

Whenever I encounter one of these doors now, I install a Protected Back Strike. Aligning the strike (usually, just using the existing strike holes) with the deadbolt strike location and the lip on the strike prevents the door from closing too far and slam-locking.

Not only do the Protected Back Strikes prevent alignment problems; they also make a nice add-on sale.

Daniel McGlynn, CML
New Jersey

Drilling Jig Tip

Whenever I drill a hole for a deadbolt using a Kwikset-type installation jig, I place a strip of "duct" tape over both inside surfaces of the jig. This has three advantages:

1. It protects the finish on the door.

2. It helps to stabilize the jig and keep it from moving.

3. It helps to collect metal shavings on the insulated steel doors so commonly used today.

Frank Smode
Oregon

Hole Saw Trick

I've always had trouble getting a hole saw to reposition a hole in a door without a guide. To solve this problem, I simply use a "C" clamp and clamp a piece of 1/4" plywood on the door, over the existing prep. Then I mark the plywood as if it is a first time prep. The plywood acts as a guide and allows the new hole in the door to be cut without the hole saw wavering.

Gary Siebring
Iowa

Shim Trick

Every once in awhile, I have trouble getting a shim into the rear of a Kwikset cylinder to shim pick the cylinder. The difficulty appears to be caused by the "step" on the rear of the plug.

I've learned that if I trim my shims to a rounded point the shim will slide over the step much easier and with less aggravation.

I've also had trouble shim picking locks because the pins are stuck, or the springs are corroded and won't put the proper tension on the pins. Flooding the cylinder with WD-40 is effective but messy.

What I do is insert a shim, turn the cylinder upside down and hold

it at an angle with the back of the cylinder pointing up. Then I gently spray WD-40 onto the shim and the curve of the shim, which is now upside down, funnels the WD-40 right into the cylinder.

R. Lazich
Wisconsin

Drill Guide Tip

It always seemed to take me too long to install a doorknocker or viewer, because of the care I had to take when drilling holes straight through the door. If the drill is angled a bit up, down or sideways, the hole on the inside of the door will not be centered properly. I've tried many things but the best guide I've ever found is easy to make and easy to use.

All you need is a spare part from the right handle set. This is the piece that secures the bottom of the handle set to the door. Most handle sets come with a screw for a wood door and a threaded through-the-door piece for metal doors.

You need a through-the-door piece with a large flat head on the inside. Some brands have a special washer that fits over the end. Schlage makes one that is perfect for this. If not, you can probably supply your own washer, which should work just as well.

The tip is to take the largest drill bit that will fit and insert it into the threaded part. Using the part itself as a guide, drill straight through until the drill bit comes out the other end. Epoxy the large flat washer on, making sure it is at a right angle to the threaded part.

To use, just drill a 1/4" hole where you need it on the outside of the door, insert your new drill guide until the flat washer is against the door and drill right through the door using the guide. The hole on the inside of the door will be exactly opposite the outside hole.

The above directions are for when a door is hollow which steel doors usually are. If the top of the washer is flat and parallel to the shaft, this tool can also be used on wood doors. On residential hollow steel or aluminum doors with a wooden stile, sandwiched between the outer "skins" the guide can be used by turning it around where the washer is against the door and the shaft points away from the door. Just hold it flat on the surface and use the guide as before.

Ted Swirsky
New Jersey

Door Viewer Installation Tip

A customer asked me to install door viewers in several of their doors. While installing those viewers, my bit would wobble and make the holes too large. Now I had to find a way to cover the oversized holes.

For or a previous job I made brass circular escutcheons to mount lever locks on. I used these same escutcheons and drilled the correct sized hole in the center to cover up the oversized hole for the door viewer. With the brass escutcheons around the viewers, the job looked even more

professional and the customer was very pleased.

C.G. Strickland
North Carolina

Crossbore Enlargement Trick

Occasionally we all get caught off guard and need to improvise. It happened to me recently when I needed to enlarge a 1-1/2" hole to 2-1/8" hole. I didn't have a tool to accomplish the task, so I came up with this solution. I removed the scalps from the outside trim of a Schlage Single Cylinder, B-162 deadbolt and installed the deadbolt in the 1-1/2" hole.

A 2-1/8" hole saw will fit perfectly over the Schlage trim which means that the larger hole will be exactly centered over the old, smaller hole. In other words the saw is positioned almost perfectly to give me the larger hole that I wanted.

On a wood door, I cut the hole 1/4" deep on both sides of the door and then remove the deadbolt and finished the enlargement. On a metal door, I cut through the skin on one side. Then remove the deadbolt and reverse the trim on the uncut side, and reinstall the deadbolt with the inside of the trim facing out and repeat the process. When I have cut through the skin on the inside of the door, I remove the B-162 and complete the holes, using the cuts in the skin for my guide.

This may seem a little bit cumbersome, but will get you through a tight spot and won't harm the deadbolt since you can put the scalps back on and use the deadbolt later.

Stephen E. Schultz, CML
Wisconsin

Jig for Drilling Rim Cylinder Holes

When installing panic bars on aluminum or steel doors, you don't have the luxury of using a back plate to secure the rim latch. The screws have to be installed through the door, and accurate drilling of the holes is essential.

To make a jig to insure the accuracy needed, I used one of the rim latches and machined a 2-1/2" long piece of 1/2" diameter aluminum round bar stock to fit through the plug hole. Then I bored a 3/16" hole through the center of the round stock. It's easy if you have a small lathe, but it's still possible to do it using a drill press.

Now all I have to do is bore the normal outside 1-1/8" hole in the door, put the rim cylinder with the round drill guide in it, and drill through it to the inner side.

The resulting hole will be the pilot hole for the 5/8" hole saw used on the inside. Then I put the rim cylinder and drill guide back in the hole, and the end of the drill guide now becomes the guide for the back plate so that I can drill the two screw holes.

From there, it's an easy matter to use the factory template to finish mounting the panic bar.

Steve Shields, CPL
California

Corbin Rekey Trick

I was called to do a lock rekey and as I always do, I surveyed the locks to see if they were all compatible so I could key them all alike. Most of the time I can do this.

In this case I had four doors, each with a Titan deadbolt and a Corbin entry lock. After I pulled all the locks I found that the new Titan key worked in the Corbin cylinder, but only with the plug out of the sleeve.

I grinding the bottom surface of the blade about 1/32" and the key fit in the Corbin Plug after I had re-pinned it and assembled it. I finished re-keying all the cylinders, put them back in the door and the customer was very happy because he now only needed one key instead of two! He even gave me a tip!

Another little tip is before your next rekey, make up sets of six keys of each common brand used in your area. In my case I make up several different sets of Kwikset, Titan, Schlage, Yale, Weiser, etc. That way, you speed up your work because you don't have to sit down and cut new keys!

Clem Gottsacker
Wisconsin

Quick Function Conversion

Recently, our locksmith department was called upon to develop an alternate system to secure a number of alarmed and restricted classrooms that were being equipped with computerized audio and visual technology.

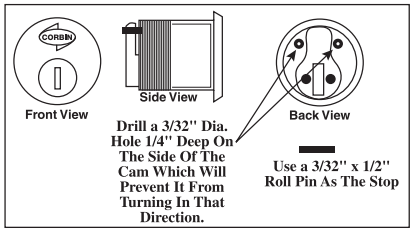
CORBIN
Front View
Side View
Back View
Drill a 3/32" Dia. Hole 1/4" Deep On The Side Of The Cam Which Will Prevent It From Turning In That Direction.
Use a 3/32" x 1/2" Roll Pin As The Stop

Figure 105.

Our task was to provide a self-closing and self-locking system from an existing mix of Corbin and Falcon mortise-style locks with classroom function lever sets.

A costly and untenable solution would be to replace the existing classroom function lock body with one that has a storeroom function.

With a deadline of only a few days, and a minimal number of man-hours available, a quick and economical solution was found.

First, I removed the cylinder. Next, I drilled and pinned the back of the cylinder on one side of the cam, ***(see figure 105).*** This will prevent the cam from being turned in the direction by which the cam would actuate the unlocked mode. The plug will still be able to turn in the opposite direction to allow the cam to retract the latch in the storeroom function mode.

Along with the installation of closers, the job was completed will within the fiscal and time constraints placed on this job.

Frank Chelkowski
New Jersey

Power Door Opener Modification

Recently I was contracted to install an LCN 4640 Series power door opener ***(see figure 106).*** Because of the door preparation, I had to use the doorframe as the mounting point, meaning that the upper mounting holes had to be used. The preparation and installation went according to the plan with no problems. Several weeks later I was called back to the building where the opener was installed. While there I thought I would see how it was holding up. I found that the screws were coming loose on the closer, possibly from the torque required to open the door with all the force coming from the bottom of the opener.

I tightened the mounting screws up again, and after some thoughts as to why this occurred,

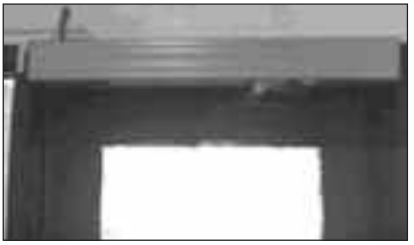

Figure 106.

Figure 107.

Figure 108.

I installed some corner brackets to the inside of the frame and attached, or anchored the bottom half of the opener, relieving a lot of stress to the top mounting screws ***(see figure 107).***

This addition has been on for several weeks now, and I have not had to perform any further service to this installation ***(see figure 108).*** I think it may also be possible to use some properly modified angle iron, which is what I am going to try on the next install of this type.

Steve Polyard
Minnesota

Nursing Home Safety Tip

At a nursing home I do work for, the bathroom doors have lever sets with a privacy function. A problem can occur when a resident locks themselves in, falls, or has an emergency while in the bathroom and the staff does not have a key handy. That would mean that the door might not be able to be opened in a timely manner.

To resolve this problem, I purchased a quantity of magnetic key boxes and an equal number of keys for these privacy function locks. Since the frames of the doors are steel, I inserted one key

in each box and attach the box to the very top of the frame.

Now there's a key at hand for each door and the staff has been trained to recognize the key's location, how the box works and to replace the key after each use.

Hopefully, the keys will never be needed, but they are in place in the event that an emergency occurs and the keys are needed.

Doug Trauschke
South Carolina

More Secure Master Keys

Recently while at an LAOC (Locksmith Association of Connecticut) meeting, during a discussion of master keying, I thought of a method to foil the production of a master key by the method outlined by Greg Mango in his Mango's Message column in *The National Locksmith* magazine back in March of 2003.

The production of a master key by filing one cut at a time of a copy of a pass key to find a second depth that will also turn the cylinder may be foiled by simply designing the master key system such that at least one cut on the master key and the adjacent cut on the pass key exceeds the M.A.C. (Maximum Adjacent Cut) for the lock system involved. If the master key has the deep cut, any attempt to file the pass key deep enough to match the master key cut will also file off the adjacent cut on the pass key and the cylinder will not turn. If the master key has the shallow cut, then the deep cut in the adjacent position on the pass key is too deep to allow such a shallow cut adjacent to it.

The "key-hacker" might suspect this technique was used and progress the possibilities on adjacent positions wherever there is a deep or shallow cut on the pass key. Since he can't determine which side of the deep or shallow cut to progress with that column, and there may be more than one deep or shallow cut, the possibilities become numerous. Such an attack will be to sophisticated for most "key-hackers" and will probably require considerable locksmith skills. The legitimate locksmith will have access to the system and may find it easier to use other methods to produce a master key.

Russell Jack
Connecticut

Comments from Don O'Shall: Wow! This one took a bit of research to determine. It is a great tip, and is partially correct. On paper this works flawlessly, but the MACS violation is not as big a boogieman as we locksmiths always thought it was. The calculations for MACS violations have always been made with a theoretical chisel point so that it could use standard mathematical triangulation. However, in the real world there is a flat on the bottom of the cutting blade, which alters the math somewhat. The result, in real world terms, is that a single sided MACS violation will in many cases permit the side of the slope of the pin to sit at the correct height

on the slope of the cut. It does not work properly, but works well enough for a hacker/thief to determine that the cut is the one he or she is looking for. When either a double MACS violation occurs or the MACS violation occurs at the tip of the key with the shallowest cut at the very tip, the technique described here works perfectly. I tried this technique with four manufacturers products with varying numbering systems and MACS values. The results described herein were the same for all of them.

Threshold Installation

I attended a Markar class years ago; and the speaker suggested that we as locksmiths look beyond the key lock and look at the total opening as a source for income. I think a locksmith makes a fantastic doorman, but a doorman makes a lousy locksmith.

I do not hesitate now to bid on small door jobs. There is a lot to be had for the not so faint of heart. The big outfits do not want the small jobs. So there is a wonderful market out there for someone who simply has to learn how to measure hinge dimensions for replacement doors.

Anyway, part of my "Total Opening" service is installing thresholds. Sometimes when you install a threshold you have to install it over carpet. That means you have to drill down through the carpet for your anchor bolts, or screws.

The problem that will often come up is that your drill bit snags the carpet and starts to unravel one or two threads across the room. Don't ask me how I know!

I found a unique solution for this problem. Just before I drill my hole I take a small butane torch and shoot the flame down the hole in the threshold. This melts the carpet together and puts a stop to the "run away carpet syndrome".

Mark Rankin
California

A Real Cover-up!

I have installed a number of continuous hinges on narrow stile doors. When doing so you have to remove the pivots to place the continuous hinges. The problem is that when you remove the top pivot which is mortised into the door's frame, you leave a hole. If you leave that pivot there, it looks odd.

I've come up with what I think is the perfect solution.

I place a pan head screw on each side of the hole. (***See figure 109.)*** Then I tighten the

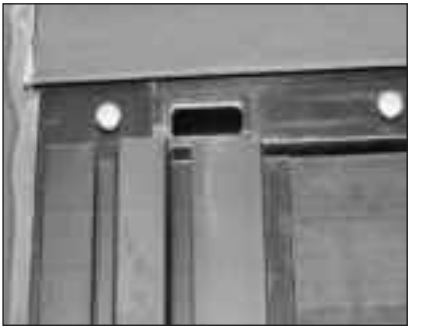

Figure 109.

Figure 110.

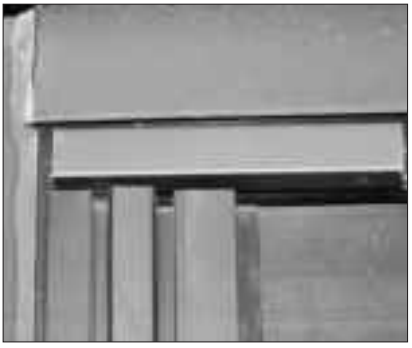

Figure 111.

screws down until I can just barely force the piece of the hinges cover (from over the gear portion of the Select Hinge) to slide tightly over the screw. ***(See figure 110.)*** Then I simply tap the cover into place.

The result looks good, hides the hole and gives the entire installation a more professional look. ***(See figure 111.)***

Kelly Johnson
North Carolina

Programming Holiday Codes

I've been programming access systems for some time now and have found an answer to the floating holiday problem.

The problem with floating holidays, such as, Memorial Day, Thanksgiving Day, etc., is they have to be reset each year, as they fall on different days of the month each year.

The solution to this problem is, each floating holiday must be programmed seven (7) times. For example, Labor Day is the first Monday in September.

By programming seven (7) holidays for Monday September 1st, Monday September 2nd, and so on through Monday September 7th, the access system will always find the Monday Labor Day falls on. The system will access the programming instructions for that Holiday, and it will ignore the Mondays with the wrong date for any given year. Thanksgiving could fall as early as November 22nd or as late as November 29th.

This does take time zones from the total system, but in my experience, and I've worked with several major brands, these systems have more time zones than are ever used.

Hope this will help to eliminate some needless annual programming.

Michael Philpot
Illinois

Roller Repair Caper

During my quarterly preventative maintenance inspection of fire doors, I found that two of the Gravity Door Drop Arm Coordinators had missing rollers. I called several of the major

Figure 112.

distributors, only to find that there would be a three-to-five week wait for replacements. I could have waited for the new ones to arrive, but I firmly believe in Murphy's Law (if something can happen, it will).

I decided to see if there was another fix available. I measured the diameter of a good roller (l") and called a local industrial plastics supply company. Within an hour I had a 2-foot piece of 1" diameter engineering stock.

I cut the correct width on a table saw, drilled the centers on a drill press and made my repairs. ***(See figure 112.)*** Not only did I have my rollers at 50% of the cost of ordering them from a supplier, I had enough plastic left over to make another twenty or so rollers if I needed them in the future.

John Falvey
Nevada

Battery Backup for Alarmed Panic Hardware

I had a couple of calls to change the battery in panic bars that had the large 6-volt dry cell batteries with plug-in connectors. I knew a conversion kit existed, but had not bought one.

Since I did not have one and couldn't locate the plug in style battery, I simply cut off the male connectors on the wires and taped them to the new dry cell. That worked, but was not the best solution as far as I was concerned.

On the next one, I took only a 9-volt battery with me, only to find it was another 6-volt plug-in style. I touched the connector to the 9-volt, pushed the panic bar in and the alarm worked!

Since I carry 9-volt connectors that I bought at Radio Shack ($3.50/pkg. of 5) for other things, I cut the plug-in connector off again and spliced in the 9-volt connector. The alarm was just as loud as with the larger 6-volt and I no longer need a conversion kit (List $35.00).

David Craig
Illinois

Editor's Note: David, I know from experience that this procedure will work. However, I'm not sure what long-term problems—if any—might crop up because you are, in essence, using a 9-volt battery to power a 6-volt device. Since, the operation of the alarm is not continuous; I don't immediately see any severe problems, but would check it out with someone at the hardware manufacturer. Otherwise, I think it's an excellent stopgap trick. Thanks for sharing.

Nail Down Stripped Allen Screws

If you've ever rekeyed a Medeco mortise cylinder, I'm sure

you've run into a problem with the Allen screws that retain the springs and pins. Often the Allen screw head is stripped and an Allen wrench just spun around in the screw.

Here's a trick that my dad taught me that not only makes removing those stripped Medeco retaining screws easy, it is also an idea that you can use on almost any Allen screw that you find with the hexagon stripped.

With the Medeco, use a #4 cut nail (also known as concrete or cement nails) and grind one end down—on all sides if necessary—until it is just slightly larger than the stripped out portion of the Allen screw. Use a hammer to gently tap the modified cut nail into the Allen screw until it is tightly wedged in the screw. Next, simply use a pair of pliers or Vise-Grip's to turn the nail counter-clockwise until the screw is extracted.

When grinding the cut nail down to wedge into the Allen screw, make sure that the sides of the nail are very close to where they would slide into the opening, but still need to be forced. ***(See figure 113.)*** Make sure you grind enough off the nail to allow it to be forced into the screw without distorting the screw and wedging it against the cylinder threads.

Since the cut nail is hardened, as you gently tap it into the screw it will cut its own channel and tightly grip the sides of the screw.

Figure 113.

This idea can work on almost any size Allen screw that might be stripped from over-use or over tightening.

Michael Maldonado
New York

Securitron Code Lockout Tip

I was installing a Securitron DK26 and a Magnalock for a customer when they asked if there was any way to lock out the user codes after hours so that an employee could not gain entry once the business shut down for the day.

I didn't know, and had not heard of such a feature, so I called Securitron's Tech Support Department, outlined my request and here's what I found out.

It is possible to use Securitron's DK16/DK26 digital keypad's Hard Code function to lock out all user codes. This will allow management to effectively lock out all other users. This function could be used for holidays, snow

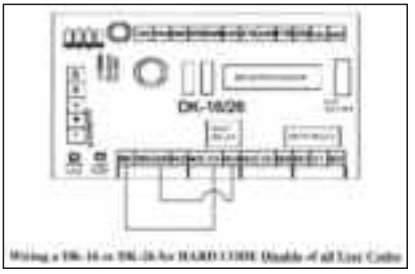

Figure 114.

days, etc. to prevent entry. By entering the Hard Code all user codes will be disabled until the Hard Code is reentered.

The first thing that you must do is wire the Digital Keypad as shown in ***figure 114,*** (this is in addition to wiring for power, locks, etc). You will then need to program at least one User Code and the Hard Code. While in the Program Mode you will also need to press in code "75". Code "75" will activate the Hard Code Toggle function. Please note that the doorbell function or any other function involving the programmable relay will not be available once the lockout function is programmed.

Illustration courtesy of Securitron, shows how to wire the DK26 to enable a lockout feature.

Steve Bright
North Carolina

Simplex 5000 Tip

Here's a very important tip concerning the new Simplex 5000 locks. This will be a time saver on call-backs for these locks.

Be sure to instruct your customer in the proper use of the "Enter" button. Make sure that they understand that they must push the Enter button and then release it before they depress the lever to open the door. If the customer holds the Enter button in and then tries to depress the lever, that action will cause the lock to malfunction and create a lockout.

Larry Teal, CPL
New Mexico

Using a Cordless Drill to Check EAC Device

I'm an institutional locksmith at a Southern Ohio prison, and have to service many electro-mechanical locks, and strikes.

Whenever I have to inspect a device, I can check the limit switches and power supply with my multi-meter. However, to check the motor or solenoid I have to take that part of the device, or the device itself to my shop and put it on my DC converter. All of the devices are 24VDC.

One day, I noticed that my Bosch cordless drill was also 24VDC, which gave me an idea when it came to servicing motors or solenoids. I put alligator clips on either end of two, 4' long by 14-guage wires. I clip one end to my drill battery and the other end to the motor or solenoid. I now have a portable tester that works very, very well and saves me a lot of time and trouble.

The amperage from the battery is enough to operate the large 1051 or 51 series detention

locks—and have plenty of oomph for the small solenoids, which are only rated for .3 amps.

Plus, I am only testing the unit's operation once or twice and not trying to run them for an extended period of time.

Paul W. Hawk
Ohio

Gate Operator Fix

About seven years ago the maintenance of the new turnstiles got dumped on me. No one else wanted it, the electricians balked because it was 24 volts, the maintenance guys didn't want it, because access control was involved, so I somehow got stuck with them.

Now the problem:

Security was telling me that when students exited immediately after another, the bar would sometimes jam, and they'd get a stiff punch in the gut, (or worse if they are shorter). After checking it out, I realized that a small spring-loaded part, called the anti-reversal pawl, would flip back and block the gear in the arm. ***(See figure 115.)*** This pawl prevents someone from "back-cocking" the turnstile to enter without a valid ID card.

Once the arm reaches its normal resting position, the pawl sits at rest. There's a space in the gear that allows it to travel in either direction at that point. It seems that once that pawl reached that space, it would sort of spring back and forth a little too wildly and allow the gate to jamb.

Figure 115.

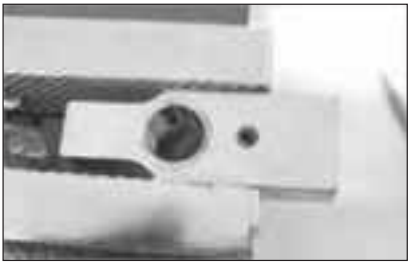

Figure 116.

The manufacturer's tech support department, while sympathetic, had never encountered this problem.

Figure 116, shows the pawl removed from the turnstile. The large hole is where the pawl pivots. The smaller hole holds a pin that hits the spring and should activate it.

I suggested to tech support that I cut off about 3/8" from the "top" of the paw, to eliminate some counterweight. The tech guy said: "Why not, you got nothing to lose!"

Wouldn't you know? It worked! Here's the pawl after being cut down. ***(See figure 117.)***

Figure 117.

I reinstalled the modified part in the turnstile. The elimination of the weight at the top of the pawl allowed the pawl to come to a rest much more quickly, and it would not block the gear, no matter how hard I tried.

This is the kind of problem solving that really leaves me feeling good.

Rick Duskiewicz
New York

Finding A Lost Trilogy Code

I had to service a Trilogy lock where the manger used his key to push the buttons when he entered the store. As a result, one of the buttons stuck and created a lockout.

Looking in the service manual, I read: "To immediately erase all codes, remove the batteries and press any button." Since I was trying to get the unit to accept a code anyway, I just pulled all the batteries and the "stuck" key acted as a depressed key and cleared all the codes in the lock.

The following is how to reset the master code and reprogram the program code.

1. Enter Master Code 1-2-3-4-5. A beep will sound and the lock will open (provided this is the master code). If not change the batteries. On the 2700's I have worked on, this resets the master code.

2. Within 5 seconds enter Master Program Code (AL-1-AL).

3. Within 5 seconds enter new master code 5-4-3-2-1 or whatever you are going to use.

4. For master code only press (AL).

5. Enter the master code again to validate (only master code must be validated) 5-4-3-2-1. Six beeps will sound.

6. Test the new master code 5-4-3-2-1 a beep will sound and the lock will open.

Management Code:

1. Enter master code 5-4-3-2-1. A beep will sound and the lock will open.

2. Within 5 seconds enter management program code (AL-2-AL).

3 Enter the management code 2-3-4-5-1, or whatever you are going to use.

4. Test the management code 2-3-4-5-1. A beep will sound and the lock will open.

User Codes:

The 2700 will accept up to 15 user codes in 3 banks, each containing 5 users. User codes are programmed by either a MASTER Code or a MANAGEMENT Code.

Users may be locked out either individually or by bank.

Consider which users or groups will be denied access on a regular basis to simplify the lock out procedure.

Table:

Bank 1 Program Code
User 1 AL-1-1-AL
User 2 AL-1-2-AL
User 3 AL-1-3-AL
User 4 AL-1-4-AL
User 5 AL-1-5-AL

Bank 2 Program Code
User 1 AL-2-1-AL
User 2 AL-2-2-AL
User 3 AL-2-3-AL
User 4 AL-2-4-AL
User 5 AL-2-5-AL

Bank 3 Program Code
User 1 AL-3-1-AL
User 2 AL-3-2-AL
User 3 AL-3-3-AL
User 4 AL-3-4-AL
User 5 AL-3-5-AL

Note: A one time service code (AL-3-AL) may be programmed in place of user 5 bank 3.

Program User Code:

1. Enter the Master code 5-4-3-2-1 or management code 2-3-4-5-1. A beep will sound and the lock will unlock.

2. From above table enter the respective Program code for the selected user.

3. Enter the user code (1-3-5-2-4) example. Six beeps will sound.

4. Test the user code.

Note: If several user codes will be programmed at one time. It is not necessary to re-enter the Master or Management Code for each, as long as the lock is not allowed to relock. After the 6 beeps repeat steps two and three.

Eugene Hansen
Nebraska

Simple Simplex Combo Change

There was an article in Beginner's Corner recently about finding a lost combination for a Simplex lock. I think my tip is quicker and easier, and I thought I'd share it.

First, remove the combination chamber, as mentioned in the article, and then remove the staked cover. Now look carefully at the gates on the wheels and take note of the distance each one is away from the locking slide plate.

The gate that is the farthest away from the fingers on the slide plate is the first digit in the combination. ***(See figure 118.)*** The next wheel that is farthest from the slide plate is the next

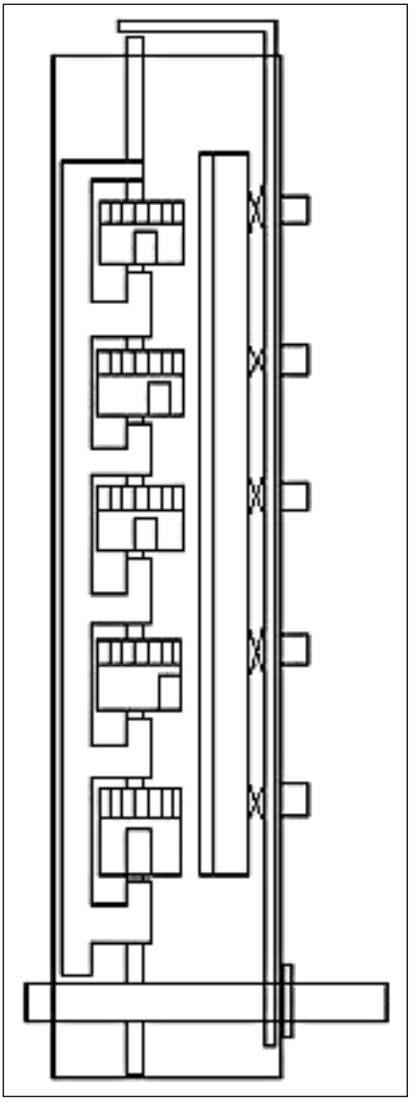

Figure 118.

number. Repeat the process until all the gates are aligned under the slide plate and that's the combination.

No need to remove those tiny "C" clips or to dismantle any internal parts.

My example in the illustration shows a combination of 4-2-1-3. In the event that two wheels are equal distances away from the slide plate, it indicates that those buttons have to be pushed together simultaneously.

I found this method to be fast, easy and accurate without the possibility of losing very small parts and springs.

Robert Smith
California

Electronic Lock Tip

International Electronics (IEI) has an electric lock that seems to be well enough made to withstand the abuse of daily, high traffic use. It is esthetically well designed and as a locksmith, I think it will be a nice addition to my product line. However, I find the installation and programming instructions leave a little bit to be desired. Consequently, I'd like to pass this on to other locksmiths that might be encountering the same problem.

The enclosed instruction sheet does have a very nice template for marking the standard 2-1/8" crossbore and the three extra holes required. The instructions are also very specific about adjusting the lock properly for the door thickness.

The lock I installed was preset as a right-handed unit. No where in the instructions did I find information about changing the hand of the lock. I discovered through trial and error, that the hand could be changed by rotating the lock body and the

outside spindle, if I first completely depressed the latch retractor mechanism. This, of course, has to be done before the lock is placed on the door.

A difficulty with the programming is changing the master code. On page six of the programming manual, the installer is strongly urged to change the master code immediately. However, no instructions are given for changing the master code. On page 16 in a table of programming commands, the installer is told that the master code resides in Location "1".

To access Location 1, the installer must follow the instructions on page 12 for "Adding New or Changing Existing Codes." To do this: place the lock in program mode by pressing "99 # 1234 *" on the keypad. (1234 is the default code.)

The slow blinking yellow LED means you have successfully entered the program mode.

Next press "1 #" for standard access. Then press "1 #" to enter Location 1 where the master code is held. Enter a new master code of your choosing. The yellow LED will now blink rapidly. While the LED is rapidly blinking, enter the new master code for a second time to confirm the new code. The LED will begin to blink slowly, indicating that the system has accepted the new master code. Press the star (*) key to exit the programming mode.

Now the system is armed with the new master code and you can program the user codes according to the instructions.

Raiford Ball
Tennessee

Alarm Lock Remote Release Tip

I recently installed an Alarm Lock DL2700 lockset and an Aiphone intercom system. I tied the remote release on the DL2700 to the door release button on the Aiphone. Everything worked beautifully. Then, I started receiving calls from the customer telling me that the unit was re-setting itself to factory defaults.

I did multiple rechecks of the wiring, batteries, and actually replaced the DL2700 a couple of times. I disconnected the remote release wires at the lock and found the lock would function normally, as long as the remote release was not part of the system.

Then I bench tested the failed DL2700's, and found that the lock that had failed in the field (with the remote release activated) worked perfectly if the remote release was not incorporated into the system.

That led me to the conclusion that somehow the Aiphone was emitting RF signals that were being transmitted through the lock release wires causing the lock to malfunction.

To eliminate the problem, I installed ferrite RF chokes

(suppressors) both in-line and over the door in an attempt to absorb any signal that was being transmitted. Although this effort substantially reduced the problem—it did not eliminate it.

Finally, I pulled shielded cable for the two station Aiphone and ran a separate wire run for the release wires. That combination did the trick and the lock, as well as the remote release, is functioning properly.

The RF suppressors were purchased at Radio Shack (RS273-102 and RS273-104) for about $25.00. Next time, We'll have some of those chokes handy when we install the T2 and remote release wires.

Dan A. McNeil, CRL
Maryland

Notes

Twenty Second Safe Opening

A cheap electronic safe sold by a national discount tool house for $40.00 has become very popular in my area and I suspect other parts of the world as well. The safe is labeled GORDON and has SKU #P45891 on the front beside the keypad, ***(see figure 119).*** If the safe is locked and operational, it can be opened in approximately 20 seconds with no damage by simply resetting the combination and unlocking it as normal. The attached photos will assist in understanding this procedure.

To reset the combination begin by using a screwdriver or metal dowel that will enter the upper left most of four factory holes in the back of the safe, ***(see figure 120).*** The combination change button is located on the edge of the lock housing nearly straight across from this hole. Push the dowel or screwdriver 91/2" into the safe and locate the button by feel, ***(see figure 121).***

It is easy as it is the only thing protruding from the lock housing

Figure 119.

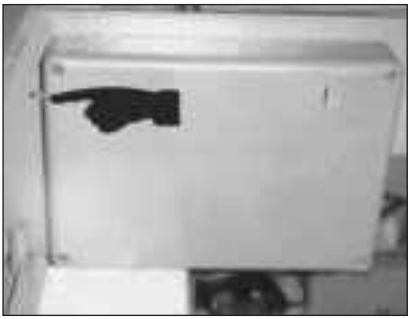

Figure 120.

Figure 121.

on the hinge side. Push the combination change button until the lock beeps. The direction to push is into the lock body away from the hinges. After the safe beeps release the button then enter four numbers and push the "A" button. The combination has been reset. Enter the new combination, push the "A" button and rotate the thumb turn to retract the two bolts within 5 seconds. The safe is open the combination is reset and you are ready to collect your fee.

Take this opportunity to sell your customer a quality safe for their valuables, and explain that

discount safes are definitely for low cost items that need minimal security only.

Bobby Floyd
Arkansas

Secure Coded Combination Generator Tip

Here's what I consider a very slick way of finding secure and yet readily available safe and or key bitting combinations. Depending on where you live, you have anywhere from a few thousand to couple million possibilities open to you.

The numbers are based on the population of your area, are readily available to you and once used from a very public source, cannot be found again unless the person looking knows exactly where the numbers were taken from.

Safe combinations generally (for a three-wheel lock) consist of six numbers: XX-XX-XX. Key bittings may be four, five, six or seven numbers. We'll use six for our example: X-X-X-X-X-X (You can also use this source for padlock combinations).

Okay, let's say you change the combination on a safe at a local restaurant. Rather then trying to figure our a combination in your head, grab the local telephone directory, randomly open it to any page; select any listing—and there's your new combination!

Assume the number you randomly selected is: 374-2698. Your new save combination could be: 89-26-47 or any combination of the base number from the directory. Such as: 37-49-28. Regardless, the number is secure unless someone saw the exact listing you chose the number from.

If you're looking for a key bitting (we'll use the same random numbers), try this:

3-7-4-2-6-9. See how easy it is?

Your local telephone directory has hundreds of listings per page, hundreds of pages per book and can be an unending code generator for you. One that no one can compromise unless they saw the exact page and listing that you used to pull the numbers from.

Steve Bright
North Carolina

Supra Lock Box Tip

A bank called to ask me to make keys for a foreclosed property they had. My contact at the bank told me there was "One of those little boxes on the door that was supposed to have a key in it." ***(See figure 122.)*** He further mentioned that he was unable to get the box open. I asked if he had a combination for the box and he said he had forgotten it.

I scheduled the job and when I got to the site, walked up to the door to scope the job out. I was ready to begin manipulating the Supra when I happened to turn

Figure 122.

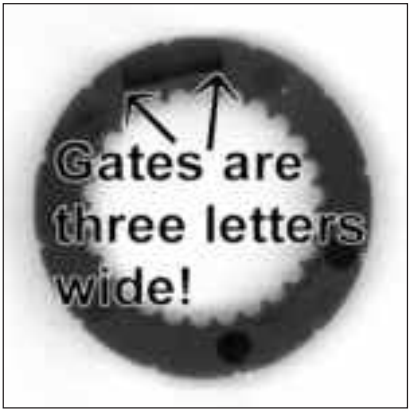

Figure 123.

the box over and on the back was a paper label with the code "SPI", which is the factory preset ***(see figure 123).***

So, three turns to the left to "S", two turns to the right to "P" and one turn to the left to "I", the box was open, and I had a key in my hand! As it turned out, that key fit all the doors, so all I had to do was dupe three keys and take

Figure 124.

the keys, the box and my invoice to the bank.

I make it a policy when I encounter these boxes where the combo is lost or unknown, to always try the factory preset first. Then, I try manipulating them. As you can see in ***figure 124,*** there are a number of false gates on the wheels, but the real gate is deep and can be easily distinguished from the false gates.

As Dale Libby would say: "Open and Prosper!"

Pete Gamble
North Carolina

Sentry 3810 Opening Trick

This is a trick I've used to get into a Sentry model 3810 fire safe.

This safe had been burglarized, but not opened. The safe was brought to me with the front panel dangling by the wires.

Figure 125, is a sketch of the display board minus, the keypad, which was missing. Notice that to

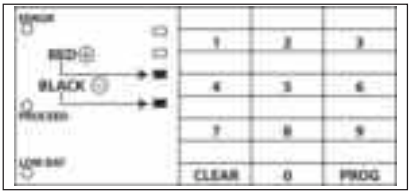

Figure 125.

the left of the top row of contacts (1-0), there is a row of contact points soldered. The 3rd and 4th contacts are the ones which are needed to open the safe by releasing the solenoid, and allows the handle to be turned downward to open the door.

Use the battery pack if still there. If not, set up a battery pack with 4 AA batteries and a wiring harness. Use the red wire or (+) to the post indicated, and the black wire to the (b) simultaneously. While holding the contact, push the handle downward (Or, have a helper do it), and the door will open. If the solenoid does not trip, try reversing the wires.

The illustration is used to depict the solder points to use for opening. If the board is ripped off like the one I had, and there are only 2 wires sticking out of the door; simply use your battery pack to touch the red and black wires to the white and black wires protruding from the door and lower the handle.

Fred Spencer
Pennsylvania

Quick FireKing File Cabinet Opening

I received a call from a large auto parts factory about 2 weeks ago. They had 500 paychecks locked in the safe and it was 10 am on Friday morning—and they couldn't get the safe open.

Upon arrival the safe was a FireKing 3 drawer fireproof cabinet, with a Medeco lock. The drive lug apparently had broken and would not retract the locking lug.

Before getting out the drill to start on this lock, here's a way I've found to open this high-security lock. On these units (at least the ones I worked on) the locking lug is not at the 12 or 6 o'clock position as in a normal file cabinet lock. It is at the 9 o'clock position; and this will help you get the unit open rather quickly.

Simply attach a safe deposit nose puller by threading the screw into the keyway. Pull the lock forward slowly and keep trying the drawer until it opens. This only requires a slight amount of pulling movement. It will not damage the plastic sleeve significantly and you can always replace that when you replace the lock. Also, the small amount of movement required to open the drawer this way will not deface or buckle the face of the cabinet around the area of the lock.

After opening the drawer, remove the lock by pushing it out the rear and replace it with another.

Glen S. Phillips, CPL
Illinois

Antique Safe Opening

About 10-years ago, I picked up an old metal heavy-duty vibrating hand sander at a garage sale for a couple of bucks. After I got it home, I found out it wouldn't hold sandpaper, but decided not to throw it out.

Then, a couple years ago, I had to open a locked antique Victor cast iron safe. Knowing that the fence was at about 11:00 on the dial, I jacked up the left side of the safe a few inches so the fence was now at 12:00. Finding the drop zone on the dial, I turned the dial 50 numbers away from the drop so the cam was pushing up on the fence and not touching the wheels.

Then I plugged in my old vibrating sander (without paper) and pressed the pad of the sander just above the dial on the safe. I pushed hard on the sander, which made the whole door vibrate. Since these old safe lock wheels had no balance holes, the wheel would rotate with the greatest portion of the weight dropping to the bottom. By doing so, the gate would be positioned on the opposite side.

In time the gates vibrated up to the 12:00 position. While doing this, I moved the dial back to the drop zone and jiggled it several times. After about 60 seconds, the safe unlocked. I lowered the safe back on the ground and opened the door.

We have, since then, done this to several other old safes by laying them on their sides, or even turning them upside down, to get the fence to drop into the gates. This works on direct drive, or gravity drop fences.

Gregory Kline
Florida

S&G 6120 Bypass

Here's how I open a Sargent & Greenleaf 6120 that has malfunctioned, in about twenty minutes.

First, I take the keypad off and pull the wire out of the way so that I can drill directly into the spindle hole with a 5/16" drill (I have used a 3/8" drill, as well). I drill very, very gently into the back of the lock case and expose the armature. Once I have the armature exposed; I use an ice pick to probe the armature in either direction until the bolt is withdrawn.

I've found this to be a quick, simple method of defeating the 6120.

Richard Oliva
Ohio

Editor's Note: Dick, thanks for the tip. The method that you describe will work very, very well on the older S&G 6120's. However, S&G quickly recognized this weakness in their lock and corrected it by inserting a hardened plate over the armature to protect it. Interestingly, you can still successfully attack a 6120 in the manner you describe except you have to stop when you reach the hardened plate and then probe the plate out of the way, thereby exposing the armature!

The only exception I would take to your method is using a drill bit to cut your hole. It would be much safer if you used an end mill cutter to cut through the back of the lock case. Using the end mill rather than a drill bit eliminates the possibility of the drill bit accidentally grabbing the motor windings and damaging the lock and motor.

Determining a Lost Combination

Often a customer will phone a locksmith when his safe won't open. If they recently changed their own combination, there are a number of mistakes they could have made to cause the lockout.

A locksmith can usually open the safe without drilling by using variations of the combination. But with the customer watching over your shoulder it is easy to forget all the variables. That is why I recommend using the following checklist and follow each of the steps to solve 90% of this kind of lockout.

Lockout after Combination Change (for 3 wheel combo):

1. Try the new combination but make the following changes:

a. Subtract 1 from all numbers

b. Subtract 1 from 1st number

c. Subtract 1 from 2nd number

d. Subtract 1 from 3rd number

e. Add one to all numbers

f. Add 1 to 1st number

g. Add 1 to 2nd number

h. Add 1 to 3rd number

2. Assuming the distance from changing index to the opening index is eight numbers; you can try the following. If the distance is more, (for example 10) then use whatever the correct number is.

a. Subtract 8 from all numbers

b. Subtract 8 from 1st number

c. Subtract 8 from 2nd number

d. Subtract 8 from 3rd number

e. Subtract 8 from 1st & 2nd numbers

f. Subtract 8 from 1st & 3rd numbers

g. Subtract 8 from 2nd & 3rd numbers

3. If the above has not allowed you to open the safe, try the following, before drilling:

a. Subtract one revolution from 2nd number

b. Subtract one revolution from 3rd number

c. Add one revolution to 2nd number

d. Add one revolution to 3rd number

4. And, finally, try this:

a. Replace 1st number with 1st number of former combination

b. Replace 2nd number with 2nd number of former combination

c. Replace 3rd number with 3rd number of former combination

d. Add 2 to the 3rd number

e. Without redialing the combination progress the 3rd number one number at a time until you have gone completely around the dial.

Mike Spencer
Canada

Pulling a Round Head, In Floor Safe

I had a round C-5 Star lift-out safe head that had been badly, but unsuccessfully burglarized. The head of the safe was beaten, the dial was missing and the spindle was beaten in until it was actually swaged in the spindle hole and refused to turn.

Because of the condition of the spindle, I knew that I could not manipulate the wheels and align the gates, nor would I be able to drill a false gate and let the fence drop-in since there was no way to turn the spindle.

Here's how I made this nightmare opening a fast, no headache opening.

About two years ago, I had made a "U" shaped puller for situations just like this, and now I had a chance to christen it. In ***figure 126,*** you can see the puller described as "A". The piece of channel iron welded across the top of the puller is to prevent the jack from distorting the top of the puller when I put pressure on it. "B" shows the puller welded to the safe head, and "C" shows the 20-ton jack inserted under the puller. The only thing not shown here is the piece of steel channel iron that fits under the jack and across the safe's floor tube to give me a base on which to operate my jack and puller.

Once everything was in place, it was a simple matter of pumping up the jack, which

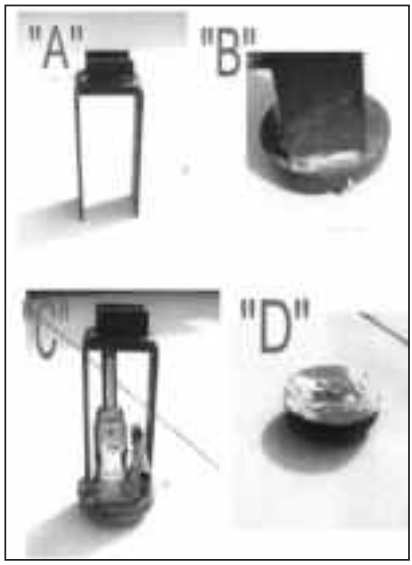

Figure 126.

pulled the Star head right out of the floor! "D" shows the head after the puller was removed.

The opening was quick, easy and hassle-free. No drilling, no scoping and no frustration.

Bill Wessel
California

Opening an Unknown Safe

I recently purchased two of these safes from an auction house. ***(See figure 127.)*** Both were locked closed. I was unable to find any definite identification in any of our safe publications.

In the photograph notice the keyhole to the right of the dial and above the handle. There were no holes for the screws for the key lock cover. When I scoped through the hole I could see glass protecting the key lock. Without the key lock cover as a guide, you could

Figure 127.

actually put a key in this hole and touch the glass.

Initially I wanted to punch the key lock, but had no idea if I would fire some unknown relocker, so I decided to drill a scope hole in the hinge side. This would allow me to go in and see what I was attacking.

I drilled a 3/8" hole on the right side. Materials encountered were steel, concrete, aluminum, and steel.

Figure 128, shows my drill bit sticking through the hole.

I scoped the key lock and saw that there was no relocker attached to the back cover. At this point I punched the LaGard lock out of the way and the wheels fell into the safe. I used my Ed Willis tool to remove the internal relocker from the key lock.

In ***figure 129,*** notice the Ed Willis tool in the key lock as I fished the lock bolt and relocker out of the way. This was much easier with the scope hole in the side. Had I known, I could have punched the key lock

Figure 128.

Figure 129.

without firing a relocker, and I would not have had to drill a hole in the side. The MP combination lock on this unit could also be punched without firing a relocker.

I was impressed with the body construction and bolt work system and believe these safes are TRTL 30x6, or the equivalent. As you can see by the bolt work and relockers it was worth drilling the scope hole. It could have also been used to scope and back dial the MP lock, if necessary.

Mike Griffin
South Carolina

Auto-Dialer Tip

While using the ITL 1000 Auto Dialer, to prevent the dialer from damaging the safe dial, you have to keep the rubber padding in top condition.

If the rubber padding on the jaws come off, just replace the rubber with an old inner tube cut to fit. I use double-sided adhesive rubber from an old inner tube, cut to fit the four jaws to protect the dial and provide a good grip for the dialer.

If the surface of the safe doesn't allow for the use of the magnetic mounting paws, get a framing strap from the hardware store to hold the dialer to the safe. Most are large enough to wrap around even the largest of safes.

Robert E. Temple, CJS
South Carolina

Emergency Dial Tip

When a safe combination is lost and it is necessary to drill the safe to open it, you can make a very versatile, fit-all safe dial knob and pointer by using a 3/8" drill speed chuck and a paper template.

Remove the outer rubber cover from the chuck and drill a small hole near the nose of the chuck. Make it large enough to accept a small length (3-1/2") of music wire. Force fit the wire and epoxy it in place. Use finger nail polish (bright red) to make the pointer more visible.

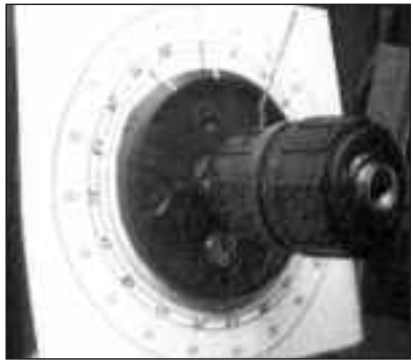

Figure 130.

Copy a dial template on card stock the diameter of approximately 4-1/2" and cut out the center of the template so that it will fit over the dial ring. ***(See figure 130.)***

Before pulling the dial in preparation for drilling to view the gates, mark the change and opening index on the safe.

Rotate the dial right to find the left side of the drop-in and record that number. Pull the dial and drill through the dial ring for a direct view of the fence/gate area. Place your paper template in the proper position; with the pointer toward the drop-in number you previously recorded (if you moved the spindle while pulling the dial, you would have to determine the drop in and then locate the pointer over the proper number).

Now dial to open. Watch the gates line up under the fence and record each number as you go. This gives you the working combination should you need it later, after you make repairs to the safe.

Wade Bovender
North Carolina

Determining a Safe Location

When installing an in-the-floor safe in a residence built on a slab, it is impossible to know where the water and sewer lines run, unless you have a blueprint. By using this method, I can determine, with a high degree of probability, where the installation is least likely to hit a water, or sewer line.

Each time I am called to install a floor safe in a home, I first make a complete diagram of the house and make sure that I note where all the spigots, sinks, washers, drains, commodes and water heaters are located. ***(See figure 131.)***

Then, I connect each of those locations with lines (Including outside faucets and the water main). Each line represents the possible route of a pipe or drain. Then, I check to see if any of those lines come too near the location the customer has chosen for the site of the safe installation.

If a line crosses, or intersects at the location of one of those lines, I tell the customer that there is a very high probability that placing the safe there might cut or damage one of the pipes or drains under the slab.

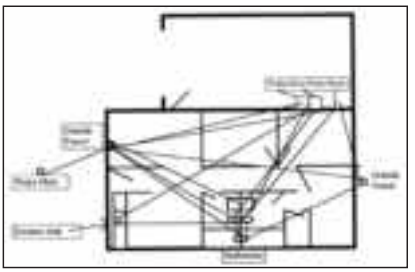

Figure 131.

If the customer insists that the safe be placed in that location, I advise the customer to call a plumber and have them standing by in case we do rupture, or cut into a line. I had this happen to me one time before and really don't care to repeat the experience.

Also, as a precaution, I always shut the water off at the incoming valve to ensure that if we do inadvertently cut a line, the water will be controllable and it will not be necessary to go hunting for the cut-off valve with water spraying into the customers closet, etc.

Dave Boemer
Idaho

Opening A Burglarized NKL

This procedure sure saved my bacon when I was called upon to open a mutilated NKL safe with Sherlock controls. The handle had been destroyed, the door was sprung and sledged, all the digital components trashed and the wiring pulled out!

Fighting the hardplate to reach the solenoid pin through a ruined, handleless door, didn't seem like a plan. Besides the store manager wanted in the safe A.S.A.P.

Fortunately, there was a similar NKL located not too far from where I was working and I took the dimensions that you see in ***figure 132,*** which got

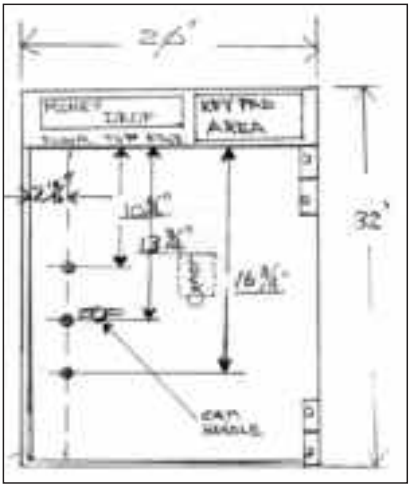

Figure 132.

me in the ruined NKL in under a half an hour!

Note: These drill points are for the 20" x 20" x 32" safe only.

First, I made a mark 2-5/16" in from the left edge of the door, near the top of the door. Then I made an identical mark near the bottom of the door. Using a straightedge, I joined the two marks. This established the centerline on which the rivets that hold the bolt work and cam together are located.

Next, as can be seen in the illustration, measuring down from the top of the door I marked an intersecting point on my vertical line at 10-3/4", 13-3/4" and 16-3/4". These three intersecting lines are directly over the rivets that I needed to drill.

I used a 1/4" drill bit to cut a pilot hole through the mild steel of the door and then used a 3/8" drill to enlarge the holes and drill the heads off of the rivets. The rivets can be through drilled or punched to separate the cam from the boltwork.

If you are working on a decent door, these rivets can be replaced with common fasteners if you were interested in salvaging the door.

Once the cam is separated from the boltwork, I probed the bolts to the right (about 5/8") until I was able to pull the door open.

I think that if I were working on one of these units where the boltwork would not probe far enough to the right to clear the edge of the door and allow it to open, I would loosen (not detach) the door hinges which would allow more play in the door.

With the bolts pulled as far to the right as I could pull them, I opened the door and accessed the contents of the safe.

Now this might seem like butchery, and would be on a salvageable door, but since this door had been beaten, banged and bent, this proved to be a fast, effective and workable method of opening this unit.

Fritz Ackerman
Ohio

Cracking a Supra

I had previously sold and installed a SUPRA lock box which I surface mounted to a wooden door. Soon there after the customer forgot the combination and called me.

After carefully prying the old box off the door, I installed a new one and decided to take the old one back to the shop and see if there was a way to open it without drilling or destroying the lock. It didn't take me long to realize that I needed a very small scope to see into the box through the mounting holes, which I didn't have.

I took the SUPRA over to a friend's shop where we used a small scope to try and read the combo through the mounting holes (This particular model had six factory drilled mounting holes in it). The first thing we discovered was that the plastic cover over the combo chamber prevented us from seeing the backside of the buttons. With a small ice pick we were able to move the cover far enough to the side to see the back of the combo buttons.

Knowing that the lock would open with the entry of the proper combination, I proceeded to read the combo through the mounting holes. Keep in mind that the lock will only respond to the proper combination, but that the combination can be entered in any sequence.

Using a second unit for comparison, it took me almost an hour to open the lock by "reading" the combination through the holes. During my attempt to open this box, I discovered that a Mag (Silhouette), with the lens removed, exposing

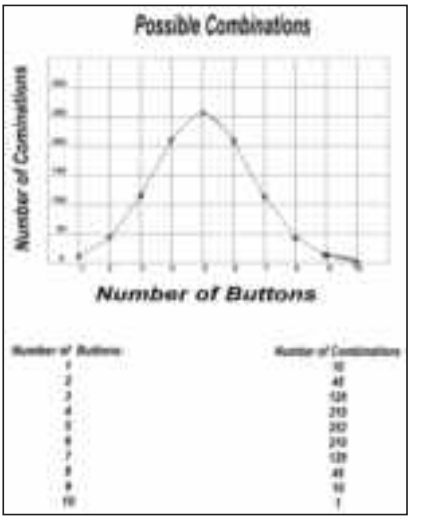

Figure 133.

the bare bulb, gave me all the light I needed to see into the interior of the lock.

To determine the combination, the arrows pointing up in the box are OFF or inactive. The arrows pointing down in the box are the actual combination. Remember that after each try of a combination, you have to clear the lock with the slide on the front of the box.

The chart shows the number of possible combinations that are available on one of these locks. ***(See figure 133.)*** The left-hand column of figures are the number of combinations, and the bottom row of figures are the number of buttons. Where the lines intersect is the number of combinations available. As you can see, the optimum number of buttons to utilize in a combination is five. Five buttons will yield 252 different combinations. That almost insures that someone is

not going to stand there and run random combinations in the hopes of getting the box open.

I offer this tip as an alternative to drilling the box open (which is the fastest way) and suggest it might be fun to sit down an play with a few of the old SUPRA's you might have around the shop.

Since the sequential entry of numbers is not an issue, it should be relatively easy to develop a progression chart listing all of the possible combinations.

Tim S. Hopkins
Nebraska

Editor's Note: If you're trying to figure out how Tim arrived at his numbers, you have to keep in mind the fact that the buttons on these units DO NOT have to be pushed sequentially. Therefore, when trying to determine the number of possible combinations, you do not figure permutations like you would on a 3-wheel, 100-number safe lock (100x100x100=1,000,000). You have to figure the formula using "factorials" ("N" is the number of buttons and "K" is the number of buttons used in the combination). I checked the numbers as shown on the chart and they are accurate as far as I can determine.

Using A Tap To Remove Safe Dial

If you're working on a safe and find that you do not have the proper dial puller—or no dial puller at all—try this.

Remove the emblem, center punch the dial and drill an 11/64" hole in the center of the dial. Once you reached the spindle stop drilling and inserted a 1/3-20 tap. Carefully turn the tap into the hole until you feel it bottom out against the spindle. Now carefully and slowly turn the tap inwards. As the tap continues to thread the hole in the dial, it will pull the dial off of the spindle.

I found this works very well on S&G dials and am sure it will work on others. The main thing is not to get in a hurry and put too much torque on the dial since you might strip out the threads that are being cut.

Eric Bowser
Maryland

Quick and Easy Vault Entry

A local church called with the complaint that they could not get into their vault.

When I got there and questioned the office manager about the behavior of the vault preceding the lockout, I found that the lock had been acting up for a long time and then it just wouldn't open.

The office manager took me back to the vault and the first thing I noticed was the name Diebold. The second thing that I noticed was that it had one of Diebold's early spy-proof, manipulation resistant locks on it. For me neither of those features were good signs.

Never having opened a vault before, I was a little intimidated by the prospect. I decided to look the situation over before calling a

friend of mine who had a lot more experience than I did in opening vaults.

The first thing I did was get a ladder and remove a ceiling tile to see if there might be access to the vault's interior from the ceiling. The top of the vault was solid concrete.

Then I went into the pastor's office, which backed up to the vault, to see if I could find a wall I could get through to access the vault. The walls were all very expensive wood paneling.

Going back to the front of the vault, I noticed a door to the left of the vault door. It turned out that the door opened into a janitor's closet.

I took some measurements from the edge of the vault door to the edge of the door jamb of the closet door and transferred the measurements from the inside of the door's jamb to the wall next to the vault. I found about an 8" difference.

I took another measurement from the floor to the center of the vault's handle, transferred that measurement to the inside wall next to the vault and drilled one 1/2" hole through the concrete block. No obstructions, no solid concrete, no barriers of any kind only the concrete block. Using my bore scope, I looked though the hole and could see the inside emergency handle.

Unfortunately, I could not find a way to manipulate the handle. I drilled holes all the way around the perimeter of the single concrete block I was looking through, used a hammer to knock the block out, reached in and pulled the emergency handle and opened the vault door.

The vault needed a new lock. The wall needed a new concrete block, and some paint. I was happy to supply all of that. About 35 minutes was the total opening time from start to finish. Not too bad for a new safe tech.

Dan Corner
Florida

Safe Repair and Reference Tip

When repairing the hole after a safe penetration, instead of a ball bearing, I put in a carbide insert.

These are circular or triangular shaped inserts used to index tool bits for machining on a lathe. These inserts are solid carbide. Worn ones can be gotten free from nearly any production machining company. New ones can be bought from machine/tooling companies at a surprisingly low price.

These inserts are much harder than a ball bearing! They come in various shapes and sizes, which allows them to fit a variety of holes. The circular inserts will rotate when drilled. I find these inserts to be much more effective than ball bearings when it comes to filling a drilled hole on a safe.

I save safe locks from opening jobs to create a hands-on reference library for figuring out drill points or malfunctions. They don't take up much space and

provide an accurate visual reference that is easier to diagnose lock problems with, than drawings, or pictures of locks. An added benefit is that if I need a drill point, all I have to do is measure the drill point on a lock that I've already worked on. Works for me.

Jack Tom
New Jersey

Sentry Model S-3807 Opening Tip

The Sentry safe (S-3807) that I was called to open had a keypad malfunction and would not respond to any input.

Sentry tech support suggested the safe be drilled and furnished me with the drill point for drilling the solenoid. That opening would also require cutting out the key lock and drilling another hole for the anti-locking device. I had the operating key for the key lock, but Sentry tech support insisted that the lock still had to be removed using their opening procedure.

What I found out was that it is not necessary to do any drilling until after having tried the following test to release the solenoid:

1. Remove the plastic cover from the keypad and remove the number pad. ***(See figure 134.)***

2. Unlock the push-in lock.

3. Connect two wires to a nine-volt battery with alligator clips ***(see figure 135)*** and make contact to solder joint "A" with the positive connection and "B" with the negative connection.

Figure 134.

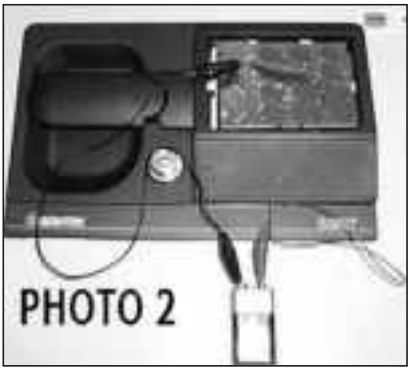

Figure 135.

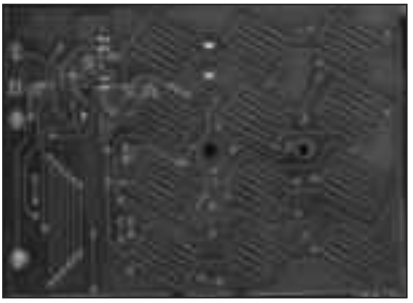

Figure 136.

(See figure 136.) At this point, I heard the solenoid release.

The tricky part is to pull the safe handle down while maintaining the Alligator clip contact with points "A" and "B".

This procedure should open the safe. Then whatever repairs are needed can be made.

John A. Nassour, CRL
Missouri

Find 'Em Faster Tip

Keeping track of time-movement winding keys for one of my vault customers has been an on-going issue. Employees would misplace it or not put it back in the same place each time they used it. That created problems for the customer and earned me some irate phone calls.

I utilized an extra large, magnetic Hide-A-Key box and put a change key and a wind key in it. I placed it just inside the vault on the side of the jamb. It is close enough at hand that even a less than conscientious employee doesn't have to go very far to put it back.

This also gives me access to a change key so that whenever I go out to change their combo, the correct change key is always handy. We also placed our company sticker on the cover for any problems that may happen. They have never called back for a new wind key since.

James Botek
Oregon

Nose Pulling Tip

It seems that safe deposit box lock parts are becoming more difficult to obtain. With the demise of Mosler and LeFebure, Diebold has—reportedly— been buying up all the surplus parts from the defunct companies.

Here is a trick I learned from an old safeman years ago, that involves saving the noses when you pull them. I had forgot this tip because with easy supplies, it was cheaper to simply replace the nose when I pulled them.

To salvage the old noses, I purchased a Snap-On Tilt Wheel Pivot Pin Puller. To use it, I drill a hole in the nose and tap to fit the puller's bolt. This allows me to extract the nose with little or no effort.

Then either braze the hole shut and polish it off…or insert a brass screw in the hole, grind off the excess and polish it off. I have now saved the nose and prepared it for reuse. Mostly, I have used this on older and rare boxes, but it will work on any of them.

Glenn Phillips
Illinois

❖ ❖ ❖ ❖ ❖ ❖ ❖ ❖ ❖ ❖ ❖ ❖ ❖ ❖ ❖ ❖ ❖ ❖ ❖ ❖

Notes

Yale Padlock Impression

I sent a couple of tips on generating keys for Master padlocks where the keys had been lost and there was no code on the lock. I mentioned in those tips that I thought I had found a less frustrating way to generate these keys, rather than impressioning them.

I also mentioned that I thought my "system" was more cost effective.

Well, I wanted to see if this "system" would be as effective on other padlocks as it had been on Master. So, I decided to test the procedure on a Yale series 8 padlocks this morning.

I have a real nice looking brass one that came off a railroad dining car someplace and I just have not had the heart to drive the pins out to make a key. This morning I cut a set of gauge keys (one key for each depth, with the depth running all the way down the blade) on the 999 blank and did my thing.

P indicates passed B indicates blocked

In this example:

The number 6-gauge key passed all pins.

The number 5 passed pins 1, 2, 3, and 4 and was blocked by pin 5.

The number 4 key was blocked by pin 1.

Therefore the following information is known about this padlock.

The deepest cut is a 6.

Pin 1 depth is a 5.

Pins 2, 3, and 4 are unknown but are no deeper than a 5.

I cut this key as 50006 and impression positions 2, 3, and 4. The actual cuts for this key was 53546. The key marked well including space 1, which was ignored. I was able to impression the lock using just 1 blank. Not only did I do it with one blank, it went much faster than trying to impression the entire key and with much less frustration.

Bob Strohecker
Missouri

Bypassing a Gardlock

I use the following procedure to gain entry on a Gardlock push button lock on a narrow stile door when the combination was not available.

First, I remove the turn knob by removing the 8-32 screw securing it to the shaft, ***(see figure 137).***

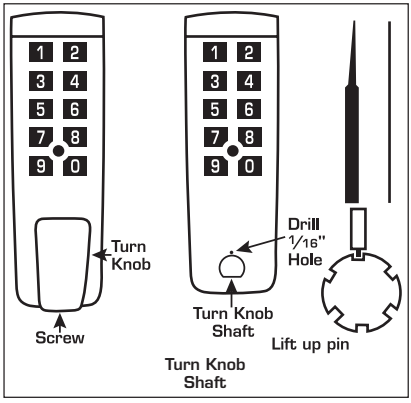

Figure 137.

Then I drilled a 1/16" hole in the lock case as close to the turn knob shaft as possible.

Then with a beveled probe, I lifted the solenoid pin out of the inner turn knob cog. While holding the pin up I rotate the turn knob to open the lock.

A longer 8-32 screw inserted in the bottom of the turn knob shaft will assist in turning.

Cec Bacon
Ontario, Canada

Door Guard Opening

I have found that with the three items included in ***figure 138,*** I could open doors in a lock out situation in two different applications.

My first was with a hotel that had a lockout problem. I used the air bag against the frame to provide scratch protection. Then I placed the Mag light between the door lever and the frame and used a prying action with the door slightly open. This will move the ball of the door guard away from the swing arm allowing the door to open. Be careful on how much force you use while pushing on the door or you'll find yourself flying into the room.

Figure 138.

The second time was in an apartment. The first tip didn't work. I had my Z-Tool kit with me and decided to try the wing window tool. Open the door slightly I placed the wing window tool just below the door guard. Then I closed the door and slid the air bag between the door and frame. Then I pumped up the air bag enough to move the wing window tool freely then flipped the tool so that I pushed the door guard away from the locked position. Open door and remove tools.

Pete Rossetti
British Columbia

Padlock Impressioning Trick

There are days when I can impression just about any lock that comes my way, and there are days that I don't think I could impression a lock that was zero bitted. I impression padlocks for practice on days that I have a bit of free time, or I buy a few without keys at a flea market for little or nothing and sell them for half price to the bargain hunters. On a service call or for walk-ins, I just hate to tell a customer that it's not cost effective to fit a key to a padlock that doesn't have a code on it, or to just throw away an otherwise perfectly good lock. It is cost effective if you can impression it in a few minutes and only use a blank or two.

The other day a friend brought me two Master #3 padlocks to make keys for. In the process I got heavy

handed and broke a couple blanks at first. I had pins marking below the #6 depth when frustration set in and I thought there has to be a better way.

For the master padlock using the 1092 (M1), cut a set of gauge keys to the 1–6 depths along the entire blade of the blank. Bump or pick the padlock open and stick a bolt in the shackle hole to keep the lock cylinder from returning to the locked position. Insert the gauge keys one at a time to see what depths pass and what depths are blocked by the pins. Results are going to vary depending upon the cylinder bitting; however the minimum information that you will gain is:

1. The deepest cut that is in the cylinder.

2. The depth of the number one pin.

You can even better your odds if you can sight read the unknown pins. Remember, you already know what pin 1 is from gauging, so you have a reference.

If you look at ***figure 139,*** you will see how I used my gauge keys to determine the cut key. A "B", means the key was blocked and a "P" means that the key "Passed". In this illustration I'm generating a key for a Master #3 padlock. In this example, the #5 gauge key passed all the pins. The #4 passed pins 1, and 2, and was blocked by pin 4. The #3 gauge key passed pins 1 and 2 and was blocked by pin 3. And, finally, the #2 key was blocked by pin 1.

Therefore I know the following about this padlock:

Master Padlock #3

SPACE		1	2	3	4
D	1				
E	2	B			
P	3	P	P	B	
T	4	P	P	P	B
H	5	P	P	P	P
	6				

P indicates passed B indicates blocked

Figure 139.

Master Padlock #37

SPACE		1	2	3	4
D	1				
E	2	B			
P	3	P	P	B	
T	4	P	P	P	P
H	5				
	6				

Figure 140.

- The deepest cut is a "5".
- Pin 1 has a depth value of "3".
- Pin 2 is of an unknown depth, but no deeper than a 2 cut.
- Pin 3 is a "4" depth
- Pin 4 is a "5" depth.

I cut this key on my code machine to 3145 and then impressioned the #2 chamber. It turned out that the actual cuts were: 3245.

In ***figure 140,*** the #4 gauge key passed all the pins. The #3 passed pins 1, 2, and was blocked by pin 3. Key #2 was blocked by pin 1.

Which means:

- The deepest cut is a #4
- The 1 pin is a "3" depth.
- Pin 3 is a "4" depth.
- Pins 2 and 4 are unknown, but pin 4 is no deeper than a

"4" depth and pin 2 is no deeper than a "3".

Reminder: If using bump keys and there is a 6 or 7 pin in the cylinder, you will not be able to remove the bump key as it will trap on one of the ramps. In this case you will have to pick the lock.

I tried this method on several Master Padlocks and experienced 100% success with it.

Bob Strohecker
Missouri

Opening Tip

When called on a lockout at a home or business, you might be surprised to find that a lot of the holes on the door jam are not drilled to the proper depth for the bolt to deadlock when thrown.

If I can see the bolt, I take an ice pick or other thin sharp tool and try to force the bolt back. It has saved me a lot of time and also the customer was happy when I drilled the hole deeper and showed them that no one would be able to open the door that easily again.

You can also move the latch bolt to open the knob lock when the strike plate is not properly installed.

Leroy Gramza
Michigan

Another Shim Trick

I find that when picking cylinders with a shim, the shim will tend to wander if the cylinder is tight, or is heavily soiled and corroded. My shim tends to slip off to one side or the other of the next pin in line.

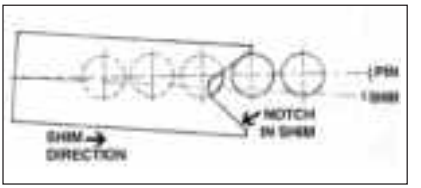

Figure 141.

By modifying my shims as shown in ***figure 141,*** I eliminate the possibility of the shim wandering. The ramps of the "U" correct the direction of the shim as it is pushed against the next pin.

With this modification, once a pin is picked, the shim slides underneath and then heads straight to the next pin in the chamber.

Robin McKinnon
New Mexico

Bumping Interchangeable Cores

I'm doing more bumping these days to open locks. When bumping Best, Arrow, etc. cores, keep in mind the key blank does not have a shoulder. Bumping these locks can damage the driver at the end of the core, due to the tip of the key being unable to pass through the driver. The lower area of the driver will be forced over the lower rivet and will bend. This seems to occur most often when bumping a 6-pin core as there is a space between the driver on the core and driver in the housing.

There are a few possible solutions to the problem.

1. Don't hit the bump key so hard that it breaks the driver off of the lower rivet.

2. Shorten the bump key to an appropriate length for the core that you are trying to bump.

3. Remove the appropriate amount of the back of the blade so the tip of the bump key will pass through the driver. For a BE2 bump key, I removed .0875 of the blade back approximately .3750 from the original tip stop. This bump key now passes through the driver on both the Best and Arrow cores.

Happy bumping.

Bob Strohecker
Missouri

Smooth Impressioning Tip

When I prep a key blank for impressioning, I use an emery board to smooth out the rough edges on the blank. I find that the smooth side of the emery board when filed from tip to bow, leaves a very smooth and clean edge, and the marks show up better.

Emery boards can be found in any drug store, or they are often given away by cosmetics dealers such as Mary Kay or Avon.

Richard M. Reppert
California

Slick Pick Trick

After receiving a call to a residential lockout, I found the front and rear matching storm doors sporting a profile cylinder, which (wouldn't you know it) were in what we in the U.S. call upside down. Above the PELLA doors' cylinders were oversized levers, which made picking somewhat difficult. Although I was able to pick the cylinder, upon turning the plug nothing happened.

I picked it again in the same direction, and again nothing. I picked in both directions many times and came to the conclusion that the working key must help to turn the cam, which throws the bolt. But, how to get a blank inside the cylinder when the pins are immobilized when they are picked was my dilemma. I pondered using my pick, but didn't want to break it off inside the cylinder and end up worse off than I already was. So I opted for the bump key method, of which I recently learned.

The customer was already somewhat disappointed in the fact that I could not get her right in, and when the bump key method produced an uncomfortable bang near her new storm door, she expressed her concern of damage, so I had to come up with something different.

Just about the time she said "That's not going to hurt my door is it?" I had a light bulb moment. I went to the truck and used my HPC 1200CM to cut a DE-6 down to all number seven cuts, and cut out the peaks as well. I went back to the door and upon picking the cylinder and turning it a quarter turn, I then slid in my "key" underneath the picked pins, turned the plug the rest of the way and the bolt slid back. I was very happy and the customer gave me a "pat on the back" for not giving up on them. I recommend cutting one now if you haven't run into this yet, and keeping it with your picks.

Jerry Goddard
Indiana

Shim Picking Trick

While shimming assorted mortise cylinders open to make keys for them; I found a simple and quick way to accomplish this. Due to the contour of some of the keyways, it was slow going using a pick.

I decided to quit picking and try shimming a Yale cylinder, so using an uncut key blank and moving it gently in and out of the keyway, while inserting a shim from the other end. Bingo! The cylinder was shimmed open in seconds! Then I tried this method on a Schlage, Kwikset and Corbin; achieving the same results on all the cylinders.

By using an uncut key blank instead of a pick will allow you to shim a cylinder in seconds. Of course, this only works if you have the cylinder in your hand.

Editor's Note: Ron, you have discovered Shim Picking! It's a great way to get cylinders open quickly. I well remember the first time I saw that done—I was astounded. Thanks for sharing your experience with us and I know that there are going to be a lot of "newbies" out there that are going to say: "Wow! What an easy way to open a cylinder!" Thanks for your tip!

Ron White
California

High Security Lock Removal Tip

A recent customer had attempted to remove a Medeco double cylinder deadbolt from his residence's door and discovered that the two mounting bolts had ball bearings inserted into the Allen heads. He successfully removed one of the bearings and bolt, but the remaining bearing would not come out, even though it was loose enough to rotate.

Using a pocket screwdriver with a head, which had been ground to a narrower width, I wedged it between the bearing and the hex opening. Angling the screwdriver away from the direction that the bolt needed to turn and tapping the screwdriver lightly with a small hammer, I was able to remove the bolt. An awl will also accomplish this as well. *(Note: this technique also works on one-way screws.)*

Without a spare mounting bolt, I still had to remove the ball bearing. This was accomplished by applying a drop of Four Minute J-B Weld® to the head of a small nail. I stuck it onto the bearing and temporarily secured the nail with masking tape. After allowing a short time for the steel epoxy to cure and grabbing the nail with a pair of pliers, I yanked and the bearing came out attached to the end of the nail.

Jim Troeller
California

Cabinet/Locker Rekey Trick

Did you ever have a customer bring in a "T" or "L" handle lock found on metal cabinets and lockers to be rekeyed? Then when you started to remove the plug, you found it didn't have a poke hole to depress the retainer and release the plug?

This meant you were going to have to either drill a hole to access the retainer, or you would have to try to fish the retaining wafer down with a bent wire, or hook. Here's a

way I've found to re-key the plug without having to drill a poke hole.

Duplicate the customer's working key. Put the key into the plug and clamp the bow of the key very tightly in a vise. Work the handle back and forth from the locked to the unlocked position while pulling straight back on the handle very hard! The cylinder will pop out (trapped on the key in the vise) with no damage. The back and forth motion, while pulling back on the handle puts pressure on the retainer and allows it to release.

This technique will only work on cylinders that trap the key. If the cylinder is keyed 3337 or 1234 (bow to tip) or similar cuts, the lock will simply pull off the key. It will work very well on cylinders keyed to 4321 or 4242 or a multitude of similar cuts that trap the key.

This technique will not, so far as we have seen to date, damage the lock or the retainer. Simply depress the retainer and snap it back together.

Jerry Sullivan
New Jersey

Quick Pick Tip for Threaded Locks

I do lock work on a large number of campers and boats using the trailer hitch pin locks and trailer coupler locks such as Gorilla.

Most of these are the type that more or less unscrew with the key inserted, and pick a quarter of a turn at a time. Since you can only pick a quarter turn at a time, the job can become tedious and frustrating.

I've found what I think is a pretty quick way to open these locks without getting frustrated to the point that you want to reach for the drill and drill the cylinder out. What I do is pick the lock and turn it one eighth of a turn and stop.

Then I get out my plug spinner, wind it tight, insert it into the keyway and flip the cylinder over. Often the cylinder will turn three, or four complete revolutions before it catches and locks again and I have to pick it again.

This way I only have to actually pick the lock two, or three times to open it, which saves me a lot of time. It really is a quick way to defeat this type of lock. I haven't tried it yet on locks like you find on gumball machines or the DETEX exit alarms, but I feel certain it would work just as well there as it does on the recreational locks.

Clarence "Sonny" White
Illinois

Easy Way To Learn Impressioning

Take a mortise cylinder with working keys. Disassemble it and replace one existing pin with one that is .035" longer. Place the cylinder firmly in a vise. You will destroy the threads unless you have a mortise jig to hold it.

Reassemble the cylinder. Then take the original working key and turn to bind, and then bump up. Release, turn the other direction, again to bind, and bump down. *(Note: bumping up and down repeatedly will not help—once you bump the pin, it will move slightly, and will not impression*

again because it has moved just a little by the "bump").

Take the key out. You know what position the impression will be (where the pin was replaced), so look to see an impression. File a few light strokes with your rat-tail or pippin file, removing only the shiny bright impression mark. Repeat until the plug rotates in the cylinder.

Then do the same thing, but replace two pins with longer ones. Remember this: "bumping" up and down repeatedly will only unnecessarily weaken your impressioning blank. Once you complete this step proceed to three chambers, then four, and then five. Soon you will be impressioning five and six pin cylinders quickly and accurately.

Next, do the same thing with a wafer cam lock…except, do not replace the wafer. Instead, cut a key by code with one position purposely higher.

With both pin tumbler, and wafer tumbler cylinders, do not be afraid (or embarrassed) to use a magnifying headset. Most often the original "impressions" will be very small and not too clear, but they will be there and you can use all the help you can get.

Unless you are interrupted, you will impression several cylinders in as little as a half hour. Keep in mind that this is a learning experience. After practicing in your shop under learning conditions, the real life in field jobs will come easily and with much self-satisfaction!

A senior police officer friend once told me that a new member of the police force would not truly be a "cop" until he has had his nose broken twice! Well, to be a locksmith that is good at impressioning, you will break at least two blanks off while working for a customer. That is called "experience." All good locksmiths will have something go wrong now and then. Breaking off a key blank while impressioning is not a sign of being bad at impressioning, just that you were probably in too much of a hurry.

John Dorsey, CML, CPS, CFL
Wisconsin

Picking Schlage Everest

Here's a tip for picking Schlage Everest cylinders. Take a piece of flat spring steel that fits in the single pin retaining groove in the cylinder. Cut, or file the tip to approximately a 45° angle, and cut the back off so it sticks out about 1/4" from the face of the cylinder when it's fully inserted. Then put a slight bend in the spring steel (this will keep the tool from slipping out of place).

Now simply insert your new tool into the retaining grove in the cylinder (bottom right-hand corner of the keyway), and proceed with your normal lock picking procedure. It is a six-pin cylinder, but it will pick. The freedom of this tool is that it allows you to put the turning wrench of your choice wherever you (would) like in the keyway.

If you typically prefer to put your turning wrench in the bottom of the keyway when picking locks, then put

a 90° bend in the spring steel and leave the end about 3" long instead of cutting it off. This way, you have a pin retaining tool and a turning wrench all in one. I hope this helps a few of you who really dig picking.

Jacob Matteson, CRL
Wisconsin

The Sound of Falling Wafers

Almost everybody is familiar with reading wafers to make keys to cars. I have found you can also listen to wafers to determine the depths.

First, lube the lock and run a key in and out a few times. Then use a wafer depressor or a pick and run it all the way to the back of the plug to depress the wafers. As the depressor is withdrawn from the plug, listen to the clicking sound made by the wafers. A loud click is a long wafer; and a soft click is a short wafer.

Using this information in conjunction with reading can help you determine those hard to read back wafers.

You can usually tell the value of the front wafers and whether the top wafer is odd or even.

If you know it is a short wafer and are not sure whether it is a one or a two, cut a 1-1/2. If you know it is a long wafer but are not sure if it is a 3 or a 4, cut a 3-1/2. With this information and a key cut to the depths indicated; try the key in the plug and check it for impression marks. If it marks in any given space, the actual cut is 2, or a 4. If it does not mark, it is a 1, or a 3.

By learning to listen to the wafers, I have decreased the amount of time it takes me to generate a key for these locks.

McNair O. Metcalfe
Mississippi

ID Card Magnetic Pick Holder

A few days back I was called to open a side door in the reception office of a large company. Normally when I pick open a lock, I usually take out my three favorite picks and two or three tension wrenches—all of which get tightly stored between my lips, and/or teeth.

The lock wasn't cooperating that day and I was getting frustrated. All this time the picks were falling out on the floor and getting drooled on. I finally noticed that everyone in the reception office was having quite a laugh at all this. They had wall-to-wall mirrors and I must admit I did look ridiculous with a mouth full of wet lock picks!

That evening I decided to come up with a cunning plan. I took my company laminated I.D card (the kind that gets clipped to your shirt) and glued a strip of that magnetic strip like folks use on fridge magnets on the back of my ID card. Now when I pick a lock I just flip my I.D card over, attach my picks and tension wrenches and pick away!

Ed Gorgulho
South Africa

Impressioning Tip

I want to share a method I devised and use to impression keys with. I use a pair of size 5WR Vice Grips®. I then weld a

Figure 142.

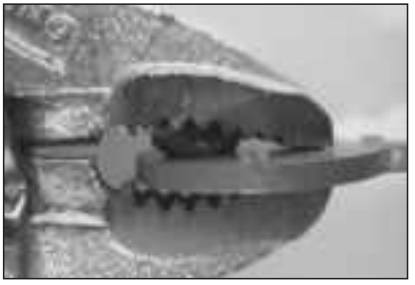

Figure 143.

small bead with a MIG welder onto the bottom jaw. ***(See figure 142.)*** I then place the key ring hole part of the blank over this weld and lightly clamp the Vice Grips®. ***(See figure 143).***

Because of the leverage principle the weld creates in the jaws of the Vice Grips® only light clamping is required. I have used this method for years and it has never failed me.

Craig Smith
Australia

5-Pin Ford Impressioning Tip

One day I had to rapidly impression an older Ford. The rush was because I was pushing daylight and my sight isn't that good anymore.

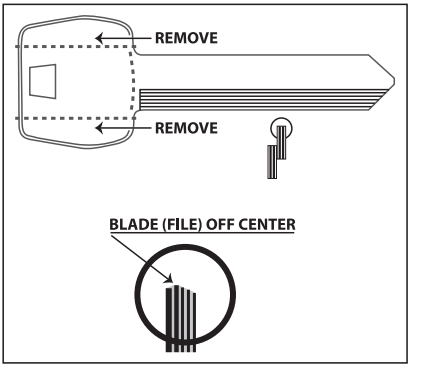

Figure 144.

Here is a little "Golden Nugget" on improving your older (5 pin) Ford impressioning skills.

By removing a portion from each side of the bow, more up and down motion is afforded, allowing a greater bump on the pins. ***(See figure 144.)*** Then after filling away a small portion of the blade as indicated below, the impressioning marks will then jump out rather dramatically. These improvements will make an old Ford impression the same as an inexpensive cam lock!

Joseph "JoJo" McCord
Georgia

Ranger Spare Tire Key Trick, Plus

When originating a key for the Ford Ranger tire lock, if you don't have the codes, you can use an X-7 key blank as your impression key. First file about 7 to 12 thousands off the tip of the key. Then, use that modified blank to impression the key. After I impression the key on an X-7, I use the long OEM blank to duplicate the impressioned key onto. Or, I simply place the OEM blank and the impressioned key in my duplicator—using a tip stop—and re-cut the tip on the X-7 to match the OEM tip.

On another note, I use a product called "Plastic Dip" on the working end of my automotive opening tools. It is a heavy-duty, flexible rubber coating, which adheres very well to the tool and allows it to grip linkages and buttons without slipping off. Apply only enough to thinly coat the tool's business end and let it dry overnight. Whenever the coating begins to wear thin, simply clean it off the tool and re-dip.

M. H. Brown
Washington

Impressioning Tip

I've been asked quite a few times recently to make keys to several Master padlocks and other products that use their pin tumbler cylinder. Most folks will say not to waste time with these, but sometimes people need keys to a group of locks that are keyed alike. I prefer to impression these locks.

I've read about lots of methods over the years, but my personal preference is successful almost every time (I haven't used more than one blank per lock the last four times). It does take a little practice, but is worth the effort and can be used for other locks like Ford 5-pin and the old Chrysler cylinders, too.

Prepare the blank by cutting zero cuts at all the spaces in the lock. Then with a round file, file at an angle at each space to form a blade at the center of each cut. Don't lower the top of the blank any; just file each side toward the center to form a little "divot" blade at each space. This divot will guide your file when you start filing later.

Hold the blank in your impressioning pliers, and insert the blank into the lock. Bind and bump as in normal impressioning and look for marks on the blade.

The divots will help trap the pins and will usually mark on the side toward the tip of the key. File at an angle (to the plane of the "blade" you've marked) to remove material in the spaces that marked, keep each space at a knife-edge and the marks will show up nicely.

Repeat until the cylinder turns. I have found that you will notice a loose feel in the key when you get close to turning. Decode the key and cut one on a code machine.

You can also use the "pull" method instead of bumping the key with this blank preparation method. Just bind, pull, and then check for marks. Both methods work well.

James Barthelemy
Tennessee

Another Impressioning Tip

When impressioning a first key, instead of using the "soot" method from a small flame, I use a black magic-marker. (I think Sharpie's work the best) Simply darken the cutting edge of the key blank, insert in the plug, and rotate back and forth 9 or 10 times. (Actually, the more times I rotate the key, the better the impression the better the marks appear to me).

I find this works great with pin tumbler and wafer tumbler locks.

Jeffrey S. Borowski
Wisconsin

Another Picking Tip For Schlage F Series

When picking a Schlage F series key-in-knob lock, you don't necessarily have to pick it to the open position, especially if it is one of the hard ones.

Try picking it to the "locked" position (sometimes they pick easier to locked than to unlocked) and then, while holding the plug in the locked position, use a hooked poke tool to depress the knob retainer and remove the knob.

You can use a pair of needle-nosed pliers to turn the actuator inside the knob to open the door.

If the customers' keys are inside the house, simply reinstall the knob and turn the plug back to the normal position. If the keys have been lost, leave the plug in the picked position, remove the cylinder from the knob, remove the "C" clip and make a key, or rekey the cylinder as the customer wishes.

Ron Beyerlein
Maryland

Impressioning Tip

To make impressioning keys a little easier, take your blank and "dress" it by cleaning the top of the blade. Then take your trusty propane torch (I have seen pocket propane torches on the market that would work very well for this application) and heat only the tip of the blank to a cherry red. Be sure to hold the blank with pliers or ViseGrips!

Let it cool off and then carefully, impression your key in the regular way. What you are doing is annealing the blank or making the metal softer. This is also why you don't want to use super heavy pressure, because the key blank will be considerably softer.

After annealing the blank, it will show the marks a whole lot better.

This works best on brass blanks. You can get brass blanks for Ford 5 cuts and the 6 cut GM's (if you know how to impression side bars.) Of course all house, apartment, padlock, etc., blanks come in brass.

By softening the blank in this manner, it does aid in impressioning a key, but again, I must caution you to cut way back on the pressure you use to get your marks as the blank can break easier.

Joan Yarrington
Texas

Unique Impressioning Handle

I have found that an old Lockwood door closer arm can be converted into a very

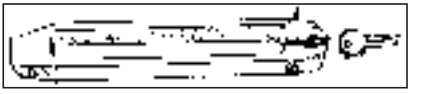

Figure 145.

effective impressioning tool. ***(See figure 145.)***

David Martinez
Texas

Handy Key Machine/Key Trick

I took two good products, put them together and made a SUPER product. I often use a portable key machine, like HPC mini Speedex or the Ilco 008, because it's easy to carry them to the job site.

For keys I use the American Key Box in my van. The key box holds 250 different kinds of keys. When I do big jobs I often find myself returning to my van several times to get more key blanks. To solve this problem and to make life a little easier, I removed the lid from my key box and mounted my mini key machine on to a piece of oak wood the same size as the lid. Then I drilled two holes into the box and lid. Two wing nuts finished off the job, and made the lid easy to remove.

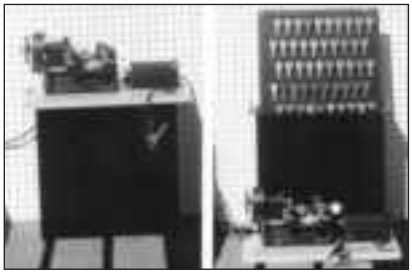

Figure 146.

Figure 146, shows how the machine is mounted to the box, and also shows how the lid goes on and lifts off. I also mounted a 500-watt inverter beside of the mini key machine. I can now use my machine when no AC power is available. I have a small battery that I take with me.

Herbert McCrider
South Carolina

Silca Bravo and Best/Falcon

We recently purchased a Silca Bravo key machine, which I am very happy with except for one thing. In the instruction manual it says to use jaw "A" to cut the Best style keys using tip stop #0402301 BA in the last slot on the jaws. ***(See figure 147.)***

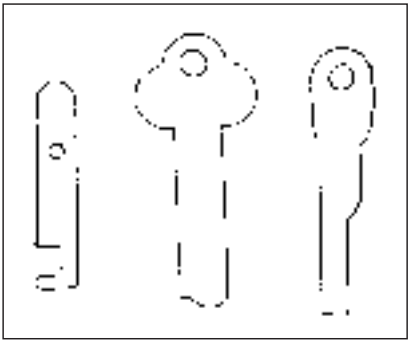

Figure 147.

The problem is when using jaw "A", it doesn't hold all the keyways straight; they tend to angle down. I found that using jaw "C" holds them in securely. You could use the same tip stop as recommended in the instructions, but I found that is not easy to insert and keep in place. If you put it in the middle slot you have to pull up on it to set the blank; and if cutting a 7-pin key it doesn't cut the first cut correctly. If you put it in the last slot you have to pull up on it and it comes out of the slot on the bottom of the jaw.

What I did was take an Ilco safe deposit key blank #1323L and altered it. The thickness is perfect; all I did was to cut the tip so it is straight. I then ground down the

head of the blank so it doesn't interfere with the cutter shield. Next I cut the front of the blank down to a height of 3/16". I then cut the rest of the blade down to 5/16" until I got to the head. This height can be whatever you choose, as it doesn't interfere with the tip of the key.

The final product is shown to the right in the illustration. Now when cutting a Best key all I do is turn the vise to jaw "C" put the tip stop in until it bottoms out, set in the key and blank and cut. I find this much easier to do this way than to follow the instructions in the manual, especially when cutting a wide grooved key.

Joey Panico
New York

Key Machine Tip

One winter morning I tried to start my HPC Speedex and the motor was real slow starting because of the cold. Then I notice that the cutter was not turning. This meant there was a broken drive belt. I had a hundred duplicates to cut for the customer and no spare belt!

Ordering a new one was not an option, as the customer wanted the keys now and even with Red Label shipping the belt was twenty-four hours away. Not to mention the extra cost of the shipping would eat up a lot of profit on the duplication job.

Looking for a solution, I recalled that I had changed the belt on my wife's vacuum cleaner a while back and the belt, as I remembered, was similar to the one on my machine.

I took the broken key machine belt into Wal-Mart and found a replacement belt that is used for vacuum cleaners. The belt is the same length as the key duplicator belt, but it is a good bit thicker and was actually cheaper to buy.

I purchased the belt and put it on the key machine. I checked the cutting tolerances and cut 100 keys for the motel. I find these vacuum cleaner belts heavier duty and they last longer than the original belts.

Timothy S. Labeots
Wisconsin

Notes

A Better View

The April and September Technitips columns included some helpful tips for bifocal wearers who need to do close work while looking upwards. The suggestions were (1) use an inexpensive pair of ready-made reading glasses, (2) wear your bifocals upside down, or (3) get prescription glasses with the reading strength duplicated at the top of the lens.

There is another option, which is cheaper than custom-made glasses and more convenient than the other methods: "stick-on" reading lenses. You put them on your existing glasses (at the top, or in any position for that matter). The lens material is a thin trimmable film, which "sticks" due to a static-like molecular attraction making them easy to remove or reposition. Several magnification strengths are available.

They are no doubt sold in many places, but I got mine by mail for $19.95 plus shipping from Sporty's Tool Shop (www.sportys.com), Batavia, Ohio 45103, and (800) 776-7897.

George Kenney
California

A Bigger Brass Hammer Tip

Every now and again, I've found that I need a bigger and heavier brass hammer when I want to put some force on something without marring, or damaging the part I'm working on.

On those occasions, I simply take an old brass mortise cylinder out of my junk box, use a pair of Vice-Grips to hold it steady and act as a handle and get the hammering job done!

I guess if you wanted to, you could take an old cylinder, drill it and insert some sort of handle in the cylinder. From my experience, the Vise Grips work just fine!

Daniel Horn
Virginia

Trip Hazard Eliminator

I have found when working in malls or other crowded areas, that I have to watch that passers-by do not trip on my tool boxes or tools.

It does not seem to matter what precautions I take, someone almost always walks into things.

Solution: I bought a flash light with a red light on the back that can be set to blinking. Now when working in busy areas I set the light out where people can easily see it and avoid the area in which I am working.

Bob Sloan
Canada

Editor's Note: Bob, good idea! With liability litigation going wild, it would pay for all of us to be more careful when it comes to where we lay our tools and equipment. In my personal experience, we have had to barricade certain areas to keep folks from getting in our way and from getting hurt by stepping on something and falling down. Also, keep this in mind: It is an irrefutable Law of Nature that people with no business in your work area are going to try to occupy that space anyway, or try to use the door your working on, even if the other door is propped wide open!

Emergency Spare Key

I have what I think is a very good tip that can prevent car lockouts. It is inexpensive and very effective. It is also very secure if one keeps it to oneself, and if few others know about it.

What I do is use weatherproof foil-type duct tape to tape a small Zip Lock bag, about the size of a car key, to the back of the front license plate. Then I slip a spare car key into the bag and seal the zip lock. It is better to use the thin metal keys, as thick keys like transponder keys will make too big a bulge.

Once sealed, I then screw the license plate back on, making sure I use large round head slotted stainless steel screws, and lightly snug the screws to the license plate holder.

Few people would expect to look there, and in the event your customer gets locked out, all they have to do is pull a quarter out of their pocket or purse and unscrew the license plate take out the key and you are set to go.

David T. Lee
Washington, DC

Spare Key Trick

Every now and then a customer asks "How can I prevent a lockout?" I never recommend the hide-a-key boxes. They fall off, and most cars made now don't have enough metal for the magnet to hold properly. It's extremely hard to get a direct contact. This means they'll eventually fall off.

Here's a method that works well. The only thing you need to be sure of is that the bow of your key is a decent size. Drill the key ring hole in a metal key out to about a 1/4" diameter and put it behind the license plate with one of the license plate screws through it, and tighten it. If your license plates are held on with plastic screws like many cars today, then you can usually remove the screws with a dime to get to your extra key.

The only way this comes off is when you remove your license plate.

Editor's Note: Jonathan, that brings back memories. It's a good tip and workable. However, I would seriously recommend that where "electronic" keys (transponder's, etc.) that this method not be used unless you first cut the customer a mechanically correct key, with out a transponder or chip. In other words, just enough to get the door open. What I meant about your tip bringing back memories: I used to show folks how to do the same thing. Then all they needed was a coin and they could unloosen the screw and retrieve their "spare" key. Thanks for the tip—keep 'em coming.

Jonathan Muhammad
Georgia

CONTICO Tool Box Keys

I had a customer that needed keys for a truck toolbox that had "Contico Tuff Box" on the lock. I called Contico to see what blank it used, because I couldn't find a blank to work. They said that they would only sell the keys to the end user at $2.00 per key.

I thought that was cheap enough, but my customer was heading out of town and needed them right away. I tried to fit some new blanks from TriMark that I ordered from Ilco and one matched the Contico lock. I used the Ilco 1623, EZ #TM15. They impression fairly easy and the one I made was mostly shallow depths.

Frank Kitchen
Indiana

Great Organizers

If you are like me and like a neat work van, I have found the best thing ever. I was at Lowe's hardware center recently and found a way to keep all of my tools neat, separated and ready to use. No more misplaced tools, no more fumbling, and no more frustration.

In the tool area at Lowe's, they had small aluminum brief cases that are padded inside ***(see illustration 148).*** One was for my VATS equipment and keys that I labeled "VATS" and the other one which I used for my transponder equipment and labeled it "TRANSPONDER" ***(see figure 149).***

These two cases worked so well for me that I bought 14 more and have all of my tools separated and readily available as I need them. I modified my workbench so the cases fit neatly under it and are easy to access and use.

Luke McCrider
South Carolina

Figure 148.

Figure 149.

Key Storage/Shipping Trick

If you are shipping or storing key blanks or other items—whether a few or many—this trick eliminates the keys piercing, and then falling out of the envelope or packaging.

Use a machine like a "SEAL-A-MEAL" and simply cut a piece from the roll of bags, insert your keys, or other items (lock cylinders, plugs, wafers, pins, etc.) apply the vacuum and then seal it ***(see figure 150).***

Figure 150.

I find this idea just great for shipping or storing items like loose key blanks or other small items that would shift and puncture an envelope or the shipping packaging used.

This process is also great for short, or long term storage. The bags are strong and can take abuse. Key blanks will not tarnish in this sealed environment. Items that might have a sharp edge, can be wrapped with paper to prevent premature puncture.

William J. Bernardini, Sr
South Carolina

Sight for Sore Eyes

This is for all you that have bad eyes and must wear bifocals. You have to work up close, but it is not possible for you to get your head in the right

position to see through your bifocals.

Go to your local department or drug store and pick up a pair of reading glasses.

They come in different strengths and you should be able to find one that matches your bifocal. Use them and you will be able to see with your head in any position. Best of all, they are inexpensive. Mine only cost $10.

Carl Findley
North Carolina

Editor's Note: Carl, thanks for the tip. If you ever forget your "reading" glasses, just take your bifocals off, turn them upside down, put them on and the bifocal part of the lens is in a position for you to see straight through it. Of course, you have to be careful not to sneeze or shake your head too hard, or your glasses with go flying!

Recycled Storage Bags

Like most mobile locksmiths, I do many routine chores in the shop or gather cylinders, keys, etc. the day before. Storing these items—and finding them—for the next day has been somewhat haphazard. Now I clothesline these items.

I have hung a length of clothesline in my shop and a short length in the van. I package the items gathered in various size plastic bags or coin envelopes. I secure the bags to the line with spring clothespins. When I set out the next day, I simply transfer the bags—marked with a magic marker—from the shop line to the van line.

If a bag is too heavy, I use a paper punch to make a hole through the folded over bag. Put a spreadable paper rivet through the holes with the clothes pin to keep the bag from sliding back and forth.

By using adhesive labels I can even recycle the bags. I store the empty bags with my day book as a memory jogger, putting notes in the bag pertinent to billing information, re-order information, or some other service that customer may want.

Bob Roman
Maryland

Locking Water Faucets

The customer I was doing a job for had a hot and cold water faucet behind his restaurant. People would come up at night and use the water and they'd often leave the water running. Since he didn't want to take the handles off and have them get lost, he asked me if there was a way to lock the faucet.

The photograph shows how I solved his problem. ***(See figure 151.)*** I simply used a piece of scrap metal that I had in my junk box, and padlocked it to the handles on the spigots as shown.

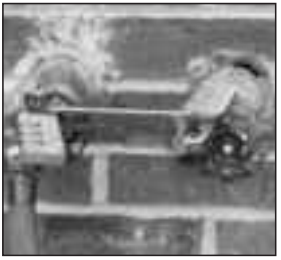

Figure 151.

At the customer's request, I used a simple combination padlock so they did not have to keep up with the keys.

Kelly R. Johnson
North Carolina

Yamaha Motorcycle Tip

A customer dropped nothing but an ignition lock at my shop from a

late model Yamaha using the YM63/X248 key blank. It was in the Lock position and needed to be picked to the Off position to get the cylinder out for key origination. I removed the cover and hardened steel faceplate to expose the cylinder.

The cylinder has to be pushed in to turn, and with only two hands, it's almost impossible to pick while pushing the cylinder in because of the heavy spring pressure working against you. To make quick work of the job, I laser cut a blank to all four depths leaving the tip cut for the precut 8th wafer. I insert the blank and push the cylinder in. The cut key will pick up all of the number 4 wafers and everything else will be sticking out of the bottom and are clearly visible.

Take a broken pick and simply raise the wafers from the bottom all at once using the blank as a turning wrench. It will pick in about two seconds once you have all the wafers raised up at once. Turn the cylinder to Off and it'll pop right out.

Melanie Long
Georgia

Cutler Mail Box Lock Tip

In my area (The Pocono's) the gated communities utilize Cutler Mail Box locks in their on-site Post Offices and gang boxes. As members of the community sell and/or move away, I am faced with re-keying large numbers of these locks and neither of the major code programs that I have has an available code card for these locks.

In an attempt to make my work easier I figured out the specs for a Cutler card and since I use both the HPC 1200 Blitz and 1200 Punch I did it on the HPC #58 micrometer card. The key blank is an Ilco 1181 C.

Code Card Depth	Pin Size
.210	.310
.220	.295
.230	.290
.240	.275
.250	.270
.260	.265
.270	.250
.280	.245
.290	.240

The spaces are at 290, 440, 590, 750, and 900. The following numbers represent the depth on the card and the corresponding pin size, as shown in the chart.

Larry Kanzer
Pennsylvania

Nothing Remote About These Profits

I have Jake Jakubuwski's CD on "How to Jump Start Your Locksmith Business -or- Ten Ways To Increase Your Shekel Intake." It is very interesting. I believe I might have found another way for locksmiths both mobile or with a storefront to easily increase their intake. Many customers have asked us if we can get replacement remotes for their cars. For the longest time we told them that it was a dealer item.

Then one afternoon I was thumbing through *The National Locksmith* and came across an ad for Keyless Ride. About 10 minutes later, again the same question about car remotes was asked, and the customer was given an answer that we would check it out. We called Keyless Ride

and their customer service was great, and they told us the price for the Remote. They also assured us that we could program the remote.

We called the dealer to compare the price and they told us that the remote would cost $175, and $45 to program it. We got a nice markup for the remote, and we sold it to the customer for $90 including programming. Everybody was happy, and we have a new supplier with Keyless Ride.

Jerry Dionisio
Colorado

Editor's Note: Jerry there are several companies that now perform this service for locksmiths. Also, LOCKMASTERS has a Remote Cloning Device available that will allow the locksmith to clone remotes from his shop or van!

The Work is Easier When You're Comfortable

The opening of a lock is much easier if you are not uncomfortable with leg, foot, back, or neck strain if the lock is about eye level and you are in a stable position. The use of all pick and turning tools are much better controlled if you are comfortable and at ease.

Being at eye level is vital to reading a lock and helps when impressioning, or manipulating a safe. Drilling is more accurately done if you are at eye level with your work area and are not cramped (not always possible) and tense.

I have found that the simple answer is a folding canvas campstool. I prefer one with wood legs, since they seem more stable. Using a stool or other type of seat can improve your skills and comfort greatly. Which in turn makes the job go easier.

It can be somewhat of a pain to carry another piece of equipment to the work area, but I find that in the long run it's well worth the effort.

Coleman Bovender
North Carolina

Credit Card Tip

A few years ago, all of my government accounts were switching from purchase order numbers to credit cards. In order to keep the accounts; we needed to begin accepting credit cards.

I spent a lot of time investigating and with a good amount of determination I finally got what I wanted. Believe me when I say that sales reps will never tell you about this service.

I pay no setup fees, no monthly fees and no transaction fees. I don't have to have special slips, nor do I have to buy or rent equipment! I do each transaction on the phone, via an automated toll free number. However, a rep is available, if needed, at no extra charge.

Since I've been doing this, I've never had a problem. The fee is .4% which is taken out of my checking account at the end of the month on the total credit card sales for that month. Some might think that's a lot. When I add it up, I find I don't do that much in credit cards sales to make up for all those extra charges (monthly fees, machine rentals, transaction fees and such) that I don't have to pay.

If you are interested in such a

credit card service, call Merchant Services at: 800-725-1243.

Carol Oar
Oregon

WD 40 Works Like A Charm

If you have a customer with an 8-cut Ford lock and they sometimes have a hard time getting the lock to turn, try WD 40.

I had a policeman with a key that would not work the trunk lock. He could open the trunk from the inside of the vehicle, but if that didn't work for some reason, he would be locked out of the trunk. He said the car had sat on the lot for nearly one year before he purchased it and had always used the inside button to open the trunk.

I removed the lock from the trunk and found out the grease was hard and when you put the key in, all the tumblers went up to the highest cut on the key; but did not come back down because of the heavy grease. WD 40 cut the grease and flushed the lock and in no time it was working fine.

Another customer had a 1998 Ford truck with a key that would not work the door lock on the left side. The dealer told her it would cost $275.00 to replace the locks. After spraying WD 40 into the lock, all the keys worked fine, and I had a happy customer!

Donald J. Geesing
Texas

Editor's Note: Donald, you'll get no argument from me when it comes to the effects of environmental corrosion and solidified grease being responsible for so many lock ills. And, neither will you get any argument from me on using WD-40 as a lubricant and lock-flushing agent. I've used WD-40 for nearly seventeen years to lube and flush locks and have always had satisfactory results. I know that there are readers who will disagree with that assessment and argue for their personal favorite. That's okay, too. I'll stick with my WD-40.

Lockpick Protector and Promotion Tip

Shortly after I bought my HPC Electric Lockpick, I found out that carrying it loose in my van was not the trick setup. Especially when I found that the pick looked like a pretzel when it came time for me to use it!

Figure 152, shows the pick protector I came up with. I picked up a piece of PVC 9" long (1-1/2" in diameter) and cut a 3/4" slot 4-1/2" long. The slot is cut only on one end and one side of the PVC. I deburred the edges of the cutout with my pocketknife and a piece of sandpaper.

I simply slide my HPC Electro-pick in its "holster" and don't have to worry about the pick being twisted or bent when I have to use it.

Figure 152.

Also, in the illustration, you can see a give away key ring. I order these with my shop name and telephone number and give them to every customer (along with my business card) that we do a job for, along with my business card. I also hand these key rings out to prospective customers that I would like to do work for.

I think they're an effective means of advertising for me.

Bob LeMaster
Mississippi

How To Save Money on Door Closers

Every day we replace door closers for our customers. With a little education and thought we can capitalize on manufacturers' warranties.

Most closers carry a five-year or ten-year warranty, which is rarely used. The manufacturer has built these warranty costs into their pricing and expects a certain number of returns.

If you purchase the model of closer you are replacing through your supplier, you can check on the warranty expiration date. With this information you can often return the closer for repair or replacement. As it is too expensive to repair these items you usually receive a new unit in return.

Of course, you don't want to abuse your suppliers with product you don't buy from them, but they should be willing to handle anything, within reason, when you show a history of product purchase. If your favorite distributor is reluctant to become involved in the warranty process; check directly with the manufacturer.

By paying attention to details, you can often get a closer back into inventory at no cost. This can represent significant cost savings for you.

Martin Brown
Canada

Taking the Tangle Out of Car Opening Tools

Getting tired of untangling car tools to look for the right one? I found an easier way to store and locate my car opening tools.

I made a trip to my local home repair center and purchased approximately 2 feet of 1 x 2 furring strips. I cut the 1 x 2 down to 12" to fit my metal shelving, and I also bought some clips, which are used on cabinets to keep the doors closed. You can find them in the hardware department, they cost approximately 64 cents a piece and come with screws.

I mounted the clips to the edge of the 1 x 2 with the provided screws and then mounted the 1 x 2 to my metal shelving in the rear of my van as it is easier for me to get to from there. It doesn't rattle or bounce around while you are driving. I used my label maker to identify and number the tools and placed them right behind the tool. ***(See figure 153.)***

For my long reach tools I used a larger clip, which is used for holding mops and broom handles in closets.

Figure 153.

I mount these clips at the top of my shelving. On these clips, I use felt tape on the inside lip to keep them from rattling, as the opening is much larger. It's the same material you use to put under chairs and tables to protect the floors.

Below the tools I installed a catalogue holder in which I store my wedges and air jacks. Now my tools are never tangled and easy to identify.

Frank X. McCann
New Jersey

Power Cord Control Tip

I know that cordless tools are becoming more and more popular and that corded tools are becoming less so. I still, however, have a large collection of corded tools in my work van. Last count was 1 drill, 2 angle grinders, 1 pencil grinder, 1 hot glue gun, 1 Dremel® and 1 soldering iron.

Now, here's my problem: because I am always short of space I tend to store all my power tools in a locked box in my van. Whenever I pull the required tool out I spend the next ten minutes untangling all the power cords.

I finally got so fed up with this routine that I decided to come up with a more convenient method of storing the tools and eliminating the cord tangling.

What I did was cut all my cords, which averaged about 1.8 meters each (that's about 6' in American) to about 30cm (approximately one foot). I then made up a separate extension cord measuring about 1.8 meters (6'). I keep that cord in a separate bag in my power toolbox. ***(See figure 154.)***

Now when I show up on site for a call, I can just grab my new hassle-free "cord-less" tools, the bag with the extension lead in it and off I go. This little time saver has stopped me wasting time untangling wires and also trying to neatly roll it all up again at the end of the job!

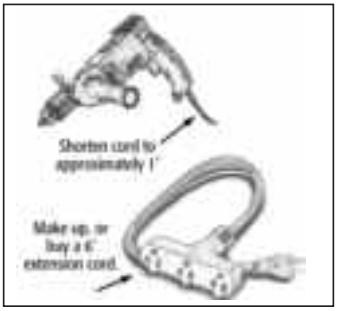

Figure 154.

Ed Gorgulho
South Africa

Air Wedge Leak Takes a Powder

I have an air wedge that I use almost every day. One day I discovered that it was leaking air at one of the seams. I thought about how to fix it and came up with this idea. Since I wear dentures I have plenty of powdered denture adhesive. I took the bulb off the wedge and poured some denture adhesive inside. I then replaced the bulb and pumped it up. I kept pumping it up until the powder got into where the leak was.

When ever you pump up air into confined spaces the water content, in the air, condenses and makes moisture. I was counting on that happening and activating the denture adhesive. It did! The leak stopped.

Then I deflated the air wedge and took off the bulb and poured out the excess powder and replaced the bulb. This is a truly quick fix. I don't know

if the repair is permanent, but it lasted until I could get a new Air Wedge.

W.T. Smith
Texas

Making An Impact on Bolts

I used to be a machinist and had to drill out a lot of oversized bolts, pins, shafts, etc. These usually had a diameter of over 1". After I had step drilled all the way up to the largest drill I could get into the 1/2" chuck, I would try an "easy out" but it rarely worked as rust and corrosion had often set in and the bolts were practically welded in. Also, the large easy outs tended to snap off if you torque them too hard. I would then have to find a drill larger than 1/2" that had a shank with no taper and turn it down on the lathe so it would fit in the chuck. This was time consuming, and the drill tended to wobble.

The biggest problem with electric drills is that they would grab and sometimes snap the drill bit off in the bolt. The bigger the drill the more torque it had, and the more prone it was to snapping the bit.

I found an electric impact wrench that had a 5/8" Morse taper attachment included with it. You can find drills for machinist work that go over the usual 1/2" inch drill, but most have Morse tapers for lathe work to fit into a lathe's tail-stock. These larger drill bits won't fit into a conventional electric drill because of the taper.

With the electric impact wrench and Morse taper attachment, I could use all those drills I couldn't use before and step drill almost all the way up to the diameter of the bolt, shaft or pin I was trying to drill out. The added benefit of the electric impact wrench was that it never grabbed like an air impact wrench that just kept turning even when it got to the end of the bolt. I just thought I'd pass this on, as I am sure there are applications for the idea in safe work and other areas of locksmithing.

Cal Ferguson
Japan

Vats Key Marking

I have found a way to mark the GM VATS keys I have. I used to put key tags on them and write the value number on the key tag. Well, over time the tags get worn, the ink fades or the tags fall off. Then I thought about stamping the value on the bow of the key! You don't need to hit it hard because it is a rubber head, just a little tap will do.

Now all I have to do is look at the bow to see which value I have. Stamping them also keeps them from getting mixed up.

Mr. Lock
Texas

Key Pouch and Harley Tip

I offer my customers something that they have just about gone nuts over. I take two of my business cards, place them back to back, then laminate them together in such a way as to form a pouch. Then I punch a hole in the end and put a give away key ring in the hole.

Whenever I decode a key to a customer's vehicle, I put the paper with the code information on it into the pouch, put the ring on it, and put the new keys on the ring. Then I give the pouch to my customer and tell

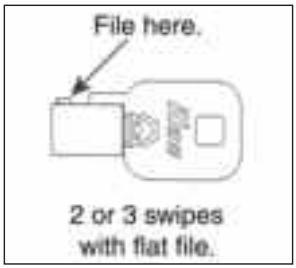

Figure 155.

them that if they should loose their keys, the information in the pouch will enable me to make keys faster and easier and will save them money.

On another note, in the last issue I received of *The National Locksmith*, I noticed a Technitip where a customer was using 137B keys to make Harley Davidson motorcycle keys. When I use these key blanks, I usually have to file the nub protrusion a bit to make the key work smoothly. ***(See figure 155.)***

Also, I would like to stress caution in trying to "read" the after market locks for the Harley's. I have found Harley's with the double-sided ignition lock have an electrical contact in the bottom of the keyway. If your reader is too long, it will make contact and either melt your reader tip completely off or burr a couple of the wafers in the lock from the current running through the reader.

William Earl Knuckles
Kentucky

Zip Tie Clip Trick

Have you ever dropped a plastic linkage clip into the bottom of a door panel when removing or servicing a vehicle door lock?

How about a late-night call? It's cold, and a clip gets broken and of course, there isn't one like it anywhere in your service truck, right? If this has happened to you, try a simple, effective solution that only taps your spare change, not your wallet.

An electrical wire tie (zip strip) will hold forever once properly applied. It's quick, very easy and only cost a couple of pennies. Simply secure the linkage rod as usual and then tie it where the clip is broken, usually around the part that snaps the rod to the clip. If the clip is lost or broken, it will take two ties linked together at a 90-degree angle.

I've used them to secure spare keys for autos, just thread the key, find a likely spot and zip. No magnets to let go or bounce off on a rough patch of roadway.

I have even used them to secure my chuck key to the cord on my drill. Just secure one to the drill chuck and one to the cord and one more to loop between them, and you will not only never loose your chuck key again, but it will also stay secured to the cord without moving.

Last week, I even secured the security sensor on a Mercedes driver's door lock cylinder using a zip strip. I had to file a groove in the bottom of the housing so it wouldn't slide off, but it did an admirable job. Because the security system had engaged, the alarm was going off and the owner couldn't start the car. The owner saved not only the tow bill, but also cab fare, rental car expense and a costly dealer repair bill.

I carry an assortment of sizes. Check them out, you'll have no trouble finding a wide variety of uses.

Roy Freiberger
Nevada

Eviction or Foreclosed Properties Tip

When called to rekey a foreclosure or eviction, you never know what you're going to run into and sometimes the odors can not only be overpowering, they can be downright sickening.

I learned this tip from the Deputy Sheriff when I was called to rekey a home where the owner had vacated the premises a day or two prior to us taking the action required by the bank.

When I opened the door the stench almost knocked us out. While I was in the van rekeying the locks, the deputy brought over a small jar of Vaseline and told me to place some on my upper lip. When in the house he said just breathe through my nose and I would no longer smell the odor in the home.

This does not excuse anyone's nasty living conditions, but will help you to get through without getting sick, and possibly even vomiting. I have also developed the habit of using a hand-sanitizing agent after leaving most jobs and rub it on the steering wheel and door handles as well. You can't be too careful out there. If you are out of work because of a sickness like the flu, you can't pay the bills.

Besides the Vaseline also comes in handy for holding those little short tailpieces in place when trying to align a Schlage deadbolt. Simply put a little under the retainer, insert the tailpiece and put it back on the door! The Vaseline is harmless to the lock and that little trick can save you a lot of time.

Wayne Gow
North Carolina

Door Saver Tip

Being a locksmith in an institution, I see many ways of holding a door open when it has a non-hold open door closer installed on it.

Mop handles are the biggest culprits when it comes to bent, misaligned, twisted doors and wracked, bent and torn out hinges. Seems like folks simply want to jamb that mop handle between the door's edge and the top corner of the doorjamb. Bad move.

This practice occasionally requires me to replace the door. If the top hinge is just bent and not torn completely out of the door, I can use my Hinge Doctor to realign the top (and sometimes the center) hinge. Otherwise, major repairs are in order.

To deter the use of mop handles, and whatever else is handy, from being used as wedges to hold the door open, I cut a 5" length of 1-3/4" x 1-3/4" aluminum angle; and install it on the corner of the jamb, just above the hinge. ***(See figure 156.)***

The bottom lip of the angle interferes with the easy placement of a mop handle. This causes the cleaning personnel to use something else at the bottom of the door where it is less likely to do damage.

I have, in some cases used 2" x 2" angle. The larger angle makes it

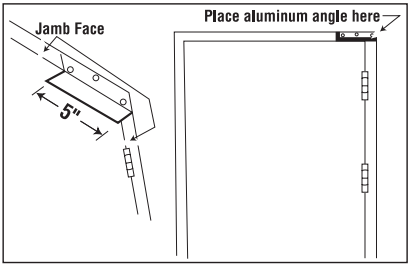

Figure 156.

even harder for the mop to be placed where it can hold the door open.

Rick Smith
Ohio

Key Blank Marking

I am currently a locksmith student with Foley-Belsaw. During one of my lessons on re-pinning and re-keying pin tumbler locks, I came across a quick and accurate way to mark a key blank for filing.

I use a fine line Sanford Sharpie permanent marking pen (black) to mark the key blank for filing. I have found that the Sharpie affords the locksmith a perfect dead-center mark on virtually any key blank. The barrel on the fine line pen is just the right circumference and length to fit into the pin holes of the lock's cylinder without marring or scratching it, and the permanent ink does not smudge or rub off. In addition, the tip of the fine line pen is small enough to make legible mark on pins, so now you can number each pin as they are removed from the cylinder.

I came across this tip when I couldn't locate my scratch awl and needed to finish my lesson. I have found this method to be fool proof and have used it on all of the re-pinning jobs that I have preformed.

Try it yourself and you will find that you will not want to be without a fine tipped Sanford Sharpie.

Michael Young
Michigan

Editor's Note: Michael, thanks for the tip. I've often said over the years that every locksmith, young, old, new or experienced can find ways of doing something a little better, a little faster or a little easier. You just proved my point. Thanks. I know as you grow in your business, you will probably find even newer and better ways to mark your blanks for filing—don't hesitate to share them with us.

Floss It

Here's a wonderful new use for waxed dental floss!

Have you ever dropped a pawl retainer or an E-clip into a door cavity while trying to finish a door cylinder on a vehicle? Here's what I do to save my knuckles and keep my blood pressure down.

I carry waxed dental floss in my tool kit. When I have a retainer or a clip that I think might give me a problem, I tie a length of dental floss to it and tie the other end around my finger or to something on the door panel.

That way, if I do drop the clip or retainer, all I have to do is pull on the dental floss, retrieve the clip and try again. Sure takes a lot of aggravation out of the job.

Once I have the retainer or clip properly seated, I simply cut the dental floss and pull it off the clip. This allows it to slide off very easily.

Frank Kitchen
Indiana

Long Reach Tool Aid

Here's a very simple replacement for that lost or damaged plastic tool sleeve when using the long reach tools. Find an empty clear plastic 1/2 or 1-gallon milk jug. Cut a side panel out of it and trim to the outline shown in ***figure 157.***

Final size will be around 8" x 4". Cut a 1" hole as shown in center

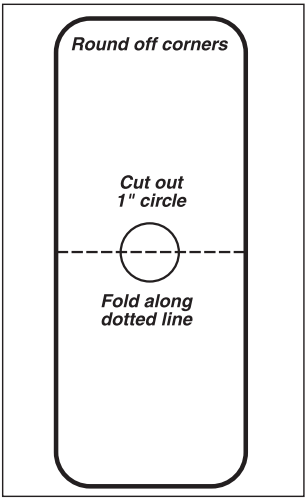

Figure 157.

and then fold in half. Insert long reach tool through hole and it's ready to use. It does a great job of protecting the paint or glass and is still pliable in cold weather. Only takes a few minutes to make.

Art Wertz
Idaho

Easier Shimming and Lock Decoding

The traditional way to shim open a lock involves slowly removing a blank key until each pin (from back to front) is raised to the shear line to allow the shim to pass under the top pins.

This is usually easy enough on locks that use standard pins. However, shimming can be tedious and frustrating when spool pins or serrated security pins are encountered, since they can trap the shim at the wrong height. I find shimming this way especially difficult on locks (such as American brand padlocks) that serrate bottom pins as well as top pins.

I've found that it is much easier to shim such locks (those with serrated pins) by using a set of depth keys to control the pin heights. Shimming a lock with depth keys is very easy and requires almost no practice.

Starting from the back of the lock, insert each depth key so that its tip cut is under the pin in question, and attempt to advance the shim. If the shim won't advance, try the next depth key. When the correct depth key is found, the shim will advance and you can move on to the next pin toward the front of the lock. If you want to ensure that any master pins always end up trapped in the plug, start with the deepest cut depth key at each pin position.

This technique has the added virtue of decoding the lock as it is being shimmed; simply keep track of which depth keys allowed the shim to advance at each pin position. If the lock is being shimmed so that it can be decoded to produce a key, there is no need to further disassemble the lock or measure the pins.

Of course, this procedure only works on locks that have been keyed to standard heights that correspond to your depth keys.

Matt Blaze
New Jersey

New Twist on an Old Trick

I'm sure most of you are familiar with the idea of using a plastic sleeve to protect vehicle surfaces from getting scratched when inserting an opening tool.

Like many locksmiths, I make my own out of 2-litre bottles. One bottle will usually yield two sleeves. The sleeves are open on one end which makes them handy for two reasons:

Figure 158.

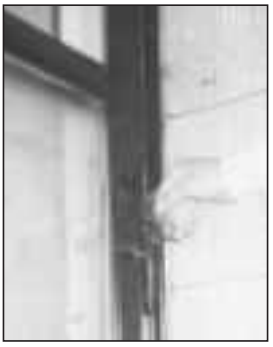

Figure 159.

One, it allows free movement of the string that I have attached to the end of my In-Cab reach tool. Two: It allows me to easily push my button grabber tool through the door with much less wear and tear on the tool. The string allows me to shake the sleeve off the tool once the tool is inside the door and helps me guide the tool to the area I want it to go.

Here's the new part of this old trick. For the longest time, I could not figure out how to get a locked storm door, with no key in the handle, open. Many times customers would say: "The back door is unlocked, or only has one lock on it, but the storm door is locked!"

I use the plastic sleeve to help unlock these doors. As you can see in ***figures 158, 159, & 160.*** I start

Figure 160.

the process by inserting the sleeve at the bottom of the door, between the jamb and the door and work the sleeve upwards until it contacts the mechanism, manipulate the sleeve around the latch—depress the latch and pull the door open.

Larry Bors
Oklahoma

"What Rhoda Wants…"

The first sign of spring at my shop was the keys on my keyboards rattling as a large group of Harley Motorcycles pulled up in front of my shop. The door opened and my shop filled with the smell of leather.

They were here for spare keys.

Most of the bikes used tubular keys and I began cutting them. I was using 137B blanks when the leader of the pack's girlfriend Rhoda (Her name was Rhoda Harley…can you believe it?) said: "I want that key!" She was pointing to an original ACE steel key that was hanging on my board.

I explained to Rhoda that I preferred using the 137B's because they didn't cause the pin wear that the steel keys did and, therefore, wouldn't give her as much trouble as the originals might.

The leader said: "What Rhoda wants, Rhoda gets!" Okay! I gave Rhoda what she wanted. They paid me and went outside.

The keyboards started shaking again as the powerful motors were revved up and the pack prepared to leave. Then, suddenly, total and complete silence.

The Leader of the pack came through the door and said to me, "My key is stuck in the fork lock and won't come out!" What I found was the steel key that I had cut for Rhoda was, indeed, stuck in the lock. Talk about a Maalox Moment!

Spraying the key and lock with Houdini, and using my Framon tool on the head of the key, I turned the key and it came out of the lock with hardly any effort.

I cut Rhoda a new key on a brass 137B. It worked smoothly. I put a purple ACE cap on Rhoda's key and she seemed happy.

I went back into my shop to wait for the next sign of spring…boat owners needing keys.

Lamar McCrider
South Carolina

Editor's Note: Although Lamar's tip is really not a tip, I thought I'd print it anyway since it does have a message (which is a tip, after all!). The point of the exercise is that you never know what to expect when a customer walks in, or when you walk into a customer's home or business. And, the only thing to do is keep cool and make sure you don't let your insurance lapse!

An Uplifting Trick

When you work by yourself, you often have need of a third hand. This is especially true when you are working on doors and replacing hinges or installing pivot hinges, or whatever.

When I have to "lift" a door to align the hinges, or I am installing a pivot hinge, I lay my HPC Air Wedge on the threshold of the door, place the door on top of the wedge and then inflate the wedge to bring the door to the height that I want it to be.

I pump the Air Wedge with my foot until the door is raised high enough and I can insert hinge pins or attach a Markar Full Surface Pivot Hinge or perform other service work on the door.

Joseph Sicari
New York

Faucet Washer Trick

I had just finished installing new lever-handled locks on a 96-unit apartment complex. The locks being replaced were a combination of old Schlage A series and some even older G series.

Since there was no rekeying involved, I decided to use the old cylinders in the new locks. They were all 5-pin cylinders and I planned to machine spacers out of 1/2" aluminum bar stock, bore the bar to 1/4" and then cut the bar in sections every 3/16".

After I had made a few, I suddenly realized that all I was doing was making aluminum faucet washers!

After a quick trip to my friendly plumbing supply company, I had enough spacers to do the job—and they were a perfect fit. Also, the Neoprene washers hold on to the tailpiece much better than the aluminum. Total cost? Five bucks!

Steve Shields, CPL
California

Key/Poke Tool/Wrench Combo

Working in a large hotel presents few opportunities to use ingenuity to make repetitive jobs a little easier.

In our facility we have numerous offices that have been secured with a Simplex 1000, or a Simplex L1000. Of course, the combinations on these locks have to be changed regularly and often, the key for the combination sleeve lock is missing or misplaced.

To solve the problem, and to facilitate service to these locks, I carry an installation wrench to which I have attached (riveted) the change key, as can be seen in ***figure 161.*** I carry this handy little tool in my pocket at all times.

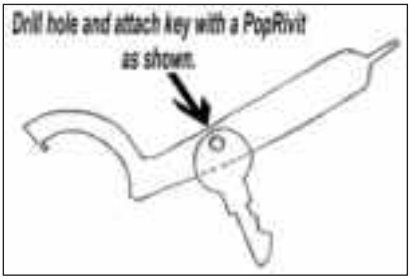

Figure 161.

I know it's not really a big deal, but it is surprising how much time I save not having to search for that key!

Mark Tichenor
Florida

Inspection Light Holder Tip

I have two inspection lights that I use for car openings which both use AAA batteries. However, I had a problem keeping the light in place while I worked inside the door cavity. I have seen some models in the catalogs that had suction cups with clips on them to hold the light up on the window. I really didn't want to spend $15.00 plus shipping to get one, so I went to an aquarium store (Steve Young gave me the idea) for the needed accessories.

There they had a clip with suction cups used to hold the filter tubes to the fish tank, and the tubes are almost the same diameter as the inspection lights battery case.

I just snapped it on, set my light in the door and pushed the suction cups to the window. It was that simple and it cost me under $4.00!

Frank Kitchen
Indiana

Roll Pin Tip

All of us have had to remove roll pins. Sometimes they come out easily, and other times they fight you every millimeter of the way.

I recently mashed a finger prying one out. After that I began looking for a better way to remove them.

I insert a spiral broken key extractor into the roll pin. Pick one that fits tightly, then simply peen the top of the roll pin over into the extractor, crimping the wall of the roll pin against the extractor.

Then all I do is pull the roll pin out with a pair of ViseGrip® pliers.

I find this method quick, simple, and a lot easier than drilling and prying.

Rick Albach
Oregon

Triple Play Tip

Here are three things I have found useful over the years.

1. I thought this would have been second nature until I saw a friend having trouble shimming a stubborn

cylinder. I find in such a case a little lubricant makes things much easier.

2. I was in need of a piece of flat spring-steel and could not find flat spring in my kit. I noticed that a pair of old windshield wipers that I had just replaced had a steel strip running down each side. I pulled one of these out and found there was more than enough spring to suit my purpose. I just had to cut off the length I needed.

I have since found these steel strips are strong enough for many uses—making springs, picks, probes, retrievers' etc.

3. The "ears" on Ford 10-cut ignitions have a habit of coming loose. I have found that if the cylinder is removed from the sleeve and the ears are staked at the seam (where they meet the cylinder with a sharp pointed punch) the ears will stay in position. I stake them in several places. I have not had a failure yet.

Bob Sloan
Canada

Suzuki Motorcycle Key Tip

I was recently making a key for a Suzuki motorcycle and only had two key blanks to work with. After making a working key for the gas cap, I used code software to determine the remaining cuts.

As there were many choices, I ran out of useable blanks quickly. Wanting to finish up the job, I filled the needed cuts of the key blanks with silver solder, reshaped the blank with a file and re-cut the blank. With this process, I was able to make two working keys for the bike.

Since I was using a nickel-plated key, you could hardly see where the repair had been made. The key blank was almost as strong as the original and got the customer moving again in short time.

If you use this process, make sure the blank is hot enough to make a good bond and replace the key with an un-modified one as soon as possible just in case the repair fails.

Jim Pakkala
Michigan

Retainer Spring Trick

You can almost learn to hate those lugs with screw caps. Try to knock out the retainer spring after taking out the retainer and it refuses to budge, no matter how many times you rap it on the workbench.

Yet, somewhere during the process of re-pinning the cylinder, the retainer spring disappears and then what?

It really doesn't happen enough for me to add retainer springs to my truck, however, when it does happen, I have a quick and simple solution. I figured out that wafer lock tumbler springs fit even the cheapest import locks.

Also, I found out that if the wafer spring is too short, I can put two of them in the hole and that adjusts the height of the retainer pin and does not interfere with re-assembly of the plug.

Rick Bridges, CRL
Illinois

Bolt Holding Tip

If you have any of those little screwdrivers with the magnets in the handle and the blade on the screwdriver is shot; don't throw the screwdriver away.

Take the magnet out of the handle and place it in a 10mm

socket. The magnet makes the socket into an excellent holder for those 10mm bolts that you have to feed through a car door panel.

The magnet prevents the bolt from falling down inside the panel when you're replacing the exterior handle on a foreign car or truck.

R. Lazich
Wisconsin

Kason Handle Tip

I do a fair amount of truck fleet work. Many of the trucks that I work on use Kason handles on the doors of their cargo compartments (usually frozen foods, dairy products, meats, etc.). Normally making keys for these locks is not a problem, the codes are stamped on the keyway. The codes are often Corbin KH codes.

The key is a 1000H. However, in the last couple of years, Kason has been buying their handles from China and the old 1000H will not work unless you file, or grind the bottom shoulder of the key. ***(See figure 162.)***

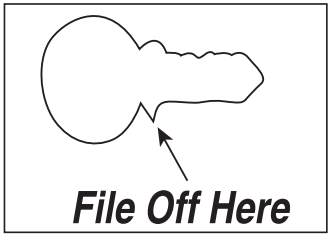

Figure 162.

With the bottom shoulder modified as shown, the 1000H blank will work with either the old or the new Kason handle locks.

Ron J. Schommer
California

Air Wedge Trick

I feel that this tip is so obvious and has probably already been submitted, but I just discovered it myself tonight.

Wedging doors with windows that are curved are more prone to breaking, and caution against wedging them is usually advised. Especially during extreme cold or heat.

I reason that glass on vehicles like this might break when wedged because we tend to use small wedges that put a lot of pressure on a small surface of the window. Almost like using an automatic center punch to break glass. You put a lot of pressure on a small area of the glass rather than spreading the pressure over a wide area.

Since my wife owns a 2001 Chevrolet Z-24, I decided to put into practice the idea I stumbled on.

I inserted an Air Wedge between the glass and the weather-stripping of the car. Then I carefully inflated my Air Wedge. What I found was that I had better control over the width of the opening to access the cavity of the door, without creating a severe pressure point that might cause the glass to shatter. Of course, I still proceed with caution, but think that I've found a way to avoid a potential problem while making it easier to access door cavities.

Paul C. Noll
Wisconsin

1986 Yamaha V-Max Key Substitute

After being called to make a key for a 1986 Yamaha V-Max, I found that I did not have the proper blank (X-118 or Y449). Checking to see

if I could substitute another blank, I found that a Nissan X-115/DA-25 would fit the keyway, but the blank was of course too long.

I shortened the blade of the key to 3/4" from the stop to the tip, and filed a double ramp at the tip to allow the key to pass the wafers in the lock. Then it was just a matter of cutting the key to code and going on to the next job.

Bert Watson
Colorado

Capping Off A Cam Lock Installation

After installing cam locks for a customer, they asked me if I had anything that would "dress up" holes in other cabinets and doors where cam locks had been previously installed and removed when security was no longer an issue.

I thought about it for a while and found that electrical blanks for 1/2" conduit fit the cam lock holes perfectly. These blanks are chrome with spring steel tensioners around the edges that hold them firmly in place once inserted into an opening.

In the electrical trade they are used to fill unused holes in junction boxes that 1/2" conduit would normally go into. The cost is about $.25 each and should be available from home centers and electrical supply houses.

They look good and work great for filling in unsightly holes.

Paul Shriber
Illinois

Lock Picking Tool Case

I found a cool, neat, and discreet way to carry around my favorite lock picking tools, keep them all together and always with me.

I scrounged up one of my old eye glass cases that have been gathering dust around the house (or you can pick one up at a junk store or at the flea market), and put it to use.

I put a rake, double ball, a pick, and small diamond and a couple of turning tools (whatever your favorites are) into the case, put the case in my shirt pocket and I'm ready and on my way. If push comes to shove, I can always slide a pair of glasses into the case if necessary.

Bill Paroby
New Jersey

E-Z Reader Storage Tip

I have had great success using EZ readers for decoding automotive locks. However, I have had trouble keeping up with the decoder slide gauge once the paper envelopes they come in begin to wear out. After having to dig through a toolbox to find my Ford 8-cut slide, I decided to come up with a better way to store the decoders.

I found that a business card file/wallet works great to hold the decoder and slide. ***(See figure 163.)***

The tools fit perfectly inside the business card slots and when the wallet is closed everything is held securely in place. The wallet fits nicely inside my toolbox for special tools and

Figure 163.

provides a professional appearance to my decoding tools. It fits into an inner coat pocket easily too.

Bobby Floyd
Arkansas

Lock "Compression" Sleeve Tip

We make our own compression sleeves out of 2" PVC pipe, which has an outside diameter 2-1/8". These rings are used to reinforce the lock area of the door and keep the skin of the door from collapsing when the lockset is tightened.

We precut about 10 of them at a time to about 1-5/8" long for 1-3/4" doors, and 10 of them at a time to about 1-1/4" long for 1-3/8" doors.

We simply prep the door as usual for both the cross bore and edge bore holes. Insert the PVC through the 2-1/8" hole. Put the lock together as normal and tighten the screws snug so that the door will "shrink" in, just a little to where the PVC compression ring and the outside skin of the door are flush.

Then we use a 1" hole saw and insert it into the latch hole you have already bored into the door and drill through the PVC ring. Remove the lock, install the bolt or latch through the PVC compression ring and then reinstall the lock and tighten as tight as possible.

Shon A Andrews
E-mail

Editor's Note: Shon, interesting idea and it appears that it will work very well. However, I thought that rather than install the lock, and drill the edge bore hole in the compression ring, and then take the lock off and install the latch, why not simply measure for the center of the width of the compression ring. After marking the centerline on each compression ring, cut your edge bore hole before you place the compression ring in the door. Then all you have to do is turn the hole in the compression ring to align with the edge bore in the door. Anyway, your idea is a good way to strengthen the lock area and keep the door from collapsing.

Pin Selection Trick

When keying several different types of lock cylinders at one location to one key bitting; I find myself continually looking up at my pin chart to find a pin, rather than going to the proper partition to pick out a .210, or a .270 pin.

Since some of the rekeys I do may have ten or more doors, the required looking up and converting the numbers is tiresome.

To eliminate the repetitive need to refer to the pin size chart on my pinning kit, I have made up some small numbered tabs that I can place in the proper partition of my pinning kit. ***(See figure 164.)*** The tabs are numbered from 1-9. I use old blister packaging to make the tabs and generate the numbers on my Brother P-Touch Label System.

Using Schlage as an example, I place the numbers as follows: 0-.165, 1=.180, 2=.195=, 3=.210, 4=.225, 5=.240, 6=.255, 7=.270, 8=285 and 9=.300 Now all I have to do is reach for a "1", or a "3", or whatever number I need to complete the pinning of the particular cylinder I'm working on.

The tabs that I cut out of old blister packs can be made from almost any material and the

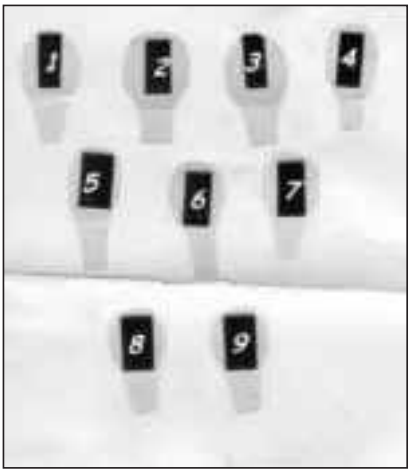

Figure 164.

numbers can be applied with a MagicMarker or a Dymo labeler. Whatever is easiest for you.

Reynold C. Appell
Wisconsin

Secure Keyring Trick

I work for a school district where there is a chronic problem with keys being removed from the many keyrings that are used by part time employees. I solved the problem with regular keyrings and a little bit of steel reinforced, two-part epoxy (The brand we use is called Propoxy).

After putting the necessary keys on a ring, I use a small amount of Propoxy to form an epoxy lock around the split area of the keyring. ***(See figure 165.)*** I form the Propoxy into a rectangular shape and just before it sets, I use my numbering stamps to apply identification numbers to the tab. If you look closely you can see the letters imprinted on the Poxypro.

Figure 165.

I find this is an economical alternative to the commercially available tamper-proof keyrings, because I can use my rings over and over. All I have to do is take a hammer and break off the epoxy and either add extra keys or use the ring for different keys altogether.

Jeffrey Sibley
New York

Mall Door Location Trick

When doing work at malls, I often have to go through the main entrance first, to notify the store manager that I am present and ready to do the job.

If I'm working on a panic device or other hardware located on a back exit door, I obviously need to pull my service vehicle to the backside of the mall to the door in question. At many malls the doors are not always marked or identified; which makes locating the exact door in question difficult.

To save time and keep from missing the door I'm going to

work on, I mark it by using my metallic address-phone/number labels. When entering through main entrance for the first time and checking out the rear door, I apply my sticker to the outside of that door. Then when I drive around back, I can easily spot the door I need to work on.

Merlin Bechtel
Mississippi

Show Case Ratchet Lock Trick

A restaurant had a wine cooler that it wanted secured to keep folks from helping themselves to the wine.

It was a double-sliding door cooler, like those used for sodas and milk in many convenience stores. The doors were about 1-1/2" thick, and slide independently of each other in opposite directions.

I figured that a hasp, hinge and padlock would look rather tacky, and decided to see if I could modify one of my ratchet locks to work on the thicker door.

I straightened out the clip portion of the lock that normally slips over the glass on a display case door, and then put a single bend of 90° in the tang. I slid the tang between the two doors, secured it to the inner door with two 10-32 x ?" screws, and slipped the ratchet mechanism over the tang, after closing the doors.

It works like a charm.

Dan Corner
Florida

Key Duplication Trick

There seem to be more and more keys coming down the line (Titan and GM for example) where the first cut from the shoulder is perpendicular to the plane of the key blade. ***(See figure 166.)***

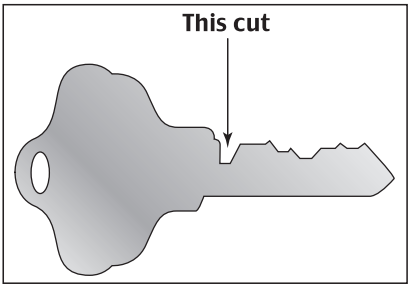

Figure 166.

To replicate that cut, I had in the past, resorted to hand-filing that cut to conform to the original. I have an old slotter machine that I use for the occasional bit/barrel key and decided to try using it to put that straight up-and-down cut on these keys.

I simply insert the key in the vise of the slotter and cut first position freehand. Makes the key look professional and it's easy to do.

Howard Fulks
Oregon

Lettin' Folks Know Who You Are

I have found what I believe to be an inexpensive, and yet, effective way of advertising.

I laminate some of my business cards between two sheets of

Figure 167.

plastic laminate (available in most hobby stores, and stationary stores) and use a standard hole punch to punch a hole in one corner of the card.

Next, I insert a give-away key ring in the hole as you can see in ***figure 167.***

After that, anytime I perform a service for a customer (originate a key, dupe a key or make keys for their filing cabinet), I attach the keys to the key ring and card and give them to the customer.

Now they have a handy key holder that has my name and telephone number on it!

It's inexpensive, effective and the customers seem to appreciate it.

Bruce Cole
Washington

Notes

Decoding Best A-2 Control Keys

This is an easy way to decode a control key (core removal key) for a Best or other A-2 System interchangeable core cylinder.

Use a LAB tool or an A-1 Decoder block and position the core to be decoded. Punch the pins down into the pin saver part of the tool and measure the top pin of each stack with a micrometer.

Use the chart below to determine the depths of the control key. It doesn't matter if the lock is master keyed or not.

Control Pin Size: Control Pin Number: Control Key Depth Cuts:

Size	Number	Depth
.162	13	0
.150	12	1
.137	11	2
.125	10	3
.112	9	4
.100	8	5
.087	7	6
.075	6	7
.062	5	8
.050	4	9

Note: The A-2 system with a pin stack total of 23 does not use a control pin larger than a #13 (.162) or smaller than a #4 (.050).

Jerry Sullivan
New Jersey

IC Core Decoding

Here is an optional way of decoding IC Cores the lock has been repined with color-coded pins. If you have a good borescope, you can, with a little practice, actually read the pins with the cylinder on the door. Provided the core has been re-pinned without using factory original pins, since most replacement pins are color-coded.

There are five colors of pins: Purple, Silver, Green, Red and Brass. The bottom pins are numbered 0–9 for a total of ten different pins. You will find each color used twice throughout the bottom pin depths. ***Figure 168*** is a pin chart (Bottom and Top) and their associated colors.

Color	Cut Number Or Pin Value	Depth Of Cut	Pin Length
Purple	***0***	***.318***	***.110***
Silver	***1***	***.305***	***.122***
Green	***2***	***.293***	***.135***
Red	***3***	***.280***	***.147***
Brass	***4***	***.268***	***.160***
Purple	***5***	***.255***	***.172***
Silver	***6***	***.243***	***.185***
Green	***7***	***.230***	***.197***
Red	***8***	***.218***	***.185***
Brass	***9***	***.205***	***.206***
Purple	2		.025
Silver	3		.037
Green	4		.050
Red	5		.062
Brass	6		.075
Purple	7		.087
Silver	8		.100
Green	9		.112
Red	10		.125
Brass	11		.137
Purple	12		.150
Silver	13		.162
Green	14		.175
Red	15		.187
Brass	16		.200
Purple	17		.212
Silver	18		.225
Green	19		.237

Figure 168.

Use a borescope or otoscope to look into the keyway and read the pins by color. With pins 0–3 you can see the top of the pins and the chart below shows you how to determine which is which.

With pins 4–9 you can only see the bottom portion of the pin but you still (with a little practice) have a good chance of progressioning (cut shallow, if in doubt) a given depth in order to open the lock. Please keep in mind that this system only allows you to make an operating key, which allows you to remove the cylinder, disassemble and determine the operating key.

By reading the color and determining which pin is used (the 0 pin is smaller than the 5 pin, even though both are purple) with practice and patience, you can make a key to open the lock.

Another advantage to reading the colors manifests itself when you have the pins in the A-1 Decoding Block, the Lab Annex or a simple wafer tray—even though the top pin colors again repeat (A 2, 7, 12 or 17 top pin are all the same color) the colors of the drivers, control and master pins are fairly easy to determine since you can readily spot a number two pin from a seven, and so on. (See ***figure 169*** with the pins marked and numbered in a cut away core).

With the pins in a tray or decoding block you can determine the Control Key cut by subtracting the Driver pin value from 23 and then deducting an additional 10 to arrive at the Control key depth for that space. Or you can use a chart such as the one by Jerry Sullivan in this month's column to determine the Control key once you know the Driver pin value.

Figure 169.

With enough practice, you will not only be able to read colored pins in a pinning tray but you will find yourself becoming adept at reading factory original pins (all one color), as well.

Note: The yellow highlighted values are Bottom Pin Values (0–9) and the un-highlighted values are the Top Pin values (2–19).

Eugene Hansen
Nebraska

Quick Interchangeable Core Pinning Tip

Here's a quick way to figure the pinning on an interchangeable core cylinder, without doing a lot of paperwork or filling out charts. Once you master this procedure, you can actually do a core in your head.

Just keep in mind that the bottom pin values as indicated

in this chart are of the total of the bottom pins and master pins, if any. Also, keep in mind that in order to determine the driver pins, you have to add your bottom pins and your control pins and subtract that total from 23.

Here's how it works:

First write down your Control Key cuts. Then write down your bottom pin totals. If the Bottom Pin value is greater then the Control Key value; subtract the difference from 10 to obtain your Control Pin value. If the Bottom Pin value is less then the Control Key value, add the difference to 10 to obtain your Control Pin value. If the Bottom Pin value and the Control Key value are the same, 10 is automatically your control pin value.

Refer to the table below for clarification.

Chamber	#1	#2	#3	#4	#5	#6
Control Key Cuts	3	6	4	2	5	5
Bottom Pin Values*	7	4	4	3	1	5
Control Pin Values	6	12	10	9	14	10
Top or Driver Pin Values**	10	7	9	11	8	8

* Equals the total of bottom and master pins.

**Add Bottom Pin values and Control Pin Values subtract that total from 23 to obtain Driver Pin values.

Just two quick notes:

Look at the first chamber. The Bottom Pin value is greater than the Control Key cuts. The difference between 7 and 3 is 4. 4 subtracted from 10 equals 6. 6 is the Control Pin value for that chamber. In Chamber #3 and #6, the Control Key cuts and the Bottom Pin values are equal. The Control pin is therefore 10. Also note that in each chamber, the Bottom Pin values and the Control Pin values are added together (Chamber #1: 7 + 6 = 13. 23 – 13 = 10) and the total is subtracted from 23, which gives you a Driver Pin value of 10.

Play with the figures a little bit and you will see how easy this really is.

Pete Gamble
North Carolina

Corbin I/C Removal

Some time ago Tom Lynch sent me a bunch of Corbin IC's without keys and still in the mortise cylinder housing. I tried picking them for removal and reuse, but no luck, as I was unable to put pressure on the control sleeve.

I ran across a tip in an old magazine in which the locksmith stated that he used a shim cut from an old soda can to apply pressure to the control lug. He picked pins 2–5 first and then picked 1 and 6 to remove the I/C from the housing. I was not successful with this method as the shim material kept tearing under pressure.

I decided to drill a 3/32 hole through the lock housing just under the control lug and apply pressure to the control lug with a probe. I was able to pick pins 2–5 which allowed rotation of the control sleeve and remove the IC from the housing. I decided to combine this technique with the bump-key technique and was very successful in removing the cores from the housings. In fact several of the cores appear to have the L1011–LXX keyway and I did not have any blanks in stock. I instead used a Yale 999A (Y2) cut to all 6's and bumped the cores to the control shear. Remember: only pins 2–5 have to be picked for the Corbin core removal.

I used a drill point 7/16 from the front of the housing and down approximately 3/32" from the centerline of the core.

Note: The housing is very thin at the drill point, so use minimal pressure to not damage the control sleeve. You will feel the drill break through the housing.

This technique allows for reuse of both the core and the housing.

Since then, I've been playing with some more I/C's. The tip also works for Best I/C's in the thicker housings. The major difference is you cannot feel the bit break through like you do on the thinner Corbin housings.

This tip should work when trying to remove most I/C cores from the various housings. I picked the Best cores as I didn't have a blank handy that would enter the keyway. I actually like this method better then using the Finch wrench.

Bob Strohecker
Missouri

Best-style Pinning Tips

Jake, I was asked the other day about ways on how an industrial locksmith could increase production and accuracy when combinating IC cores, and I thought I would pass my thoughts along to you as well.

There are four things we have learned over the years in our busy shop to increase production without sacrificing accuracy:

1. We have changed our pin kits from a horizontal box type to a homemade vertical one (Best equivalent is part # CD433 for those of us lucky enough to be able to order directly from Best) with three rows of 10 scoop type bins labeled as follows:

1st row (top row): 1A, 2A, 3A, 4A, 5A, 6A, 7A, 8A, 9A, 0A

2nd row: Spare, 2B, 3B, 4B, 5B, 6B, 7B, 8B, 9B, 10B

3rd row: 11B, 12B ,13B, 14B, 15B, 16B, 17B, 18B, 19B, spare

2. Teach yourself to combinate two cores at one time (if they have the same mass equation). There will be a temporary slowdown due to the learning curve, but if you persist the results are definitely worth it for serious combinators. It's just as easy to pick up two pins at a time as one.

You may have trouble with 3's and 4's unless the top of your chambers have been reamed out prior to loading. This trick I learned from a "Top" Best combinator a year ago (a Chinese lady named Lily).

3. I play Baroque music in the background and have found that of all the types of music I have listened

to, I make the fewest number of combinating errors (almost zero) when this is playing. I learned this trick years ago from reading a book called "Super Learning". I believe it has something to do with the "tempo" or beat of the music.

4. Make a game out of whatever job you happen to be doing! If your "record" for combinating cores yesterday was 96, see if you can make it 97 today and 98 or more tomorrow. Always challenge yourself to do better the next time. And remember, if you find a job you really like, you will never work another day in your life. I've reached that point as you may have guessed!

Doug Olenick
Canada

Determining Number of Pins In an I/C Core

When called upon to service an interchangeable core, it is necessary to determine whether you are dealing with a five, six or seven pin core. This information is particularly important if you are trying to remove a core without a control key and the bitting of the control key is unknown. That means, of course, that you must drill the core to remove it. If you drill too far you risk destroying a part of the lock housing.

An obvious way to gauge core length is to take a key blank and insert it all the way into the keyway until it bottoms out against the tip stop. Mark the blank with a marker at the face of the core, then remove the blank and measure the distance from tip of key to the mark.

A five-pin core will measure 15/16" from the tip to the mark on the blank. A six-pin will measure 1-3/32" and a seven-pin will measure 1-1/4" from the tip.

Next, mark a #8 drill bit with the appropriate measurement, then center punch the core just below the bottom and between the letters "E" and "S" in Best. If you have an Arrow, Falcon, or other A-2 system, determine the center of the bible just under the letters and at least 3/8" above the top of the plug. Drill to the depth marked on the bit.

After drilling you should see part of the leftover control lug in the upper left hand side of the drill hole. If the control lug is not yet visible, pry the face cap off with a pointed punch. Then use a small flat screwdriver to pry the lug over to the right and then pry the core out of the lock housing.

Another way to determine core length (a method I prefer) is to cut a number 4 depth on the upper portion of the tip of a key blank for that keyway. The blank is then inserted slowly to the back of the core, counting "pin clicks" as it is pushed in. I use this method whenever I have to pick the core as it tells me how many pin stacks I'm dealing with.

Doug Olenick
Canada

I/C Core Pinning Trick

There are any number of pinning aids and charts available to the locksmith who does I/C core work. Many of them require writing down series of numbers on a chart to keep track on the bitting of each core.

Here's an easy way of figuring out the bitting for any single core in a given system (assuming you are not ghost keying).

Determine the control key cuts and mentally add ten to each one. Next, determine the deepest cut (combined total of the master key and change key or the key with the deepest cut for a chamber, subtract that number from the control number and that gives you your control pin number.

For example: The Control Key is (from tip to bow) 9-6-7-7-3-2. If you add the requisite "10" to each number then the Control Number is 19-16-17-17-16-13-12.

Now assume that your change key for this core is (again from tip to bow) 5-8-7-6-3-4. To determine the control pin, simply subtract the depth value of each chamber from the Control Number, which gives you the following 14-8-10-10-10-8. Those numbers are your Control Pin numbers.

You can determine your top (or driver pins) by subtracting the Control Key Bittings from 13. Consequently, your drivers are 4-7-6-7-10-11.

Let's check that out:

Bottom Pin:	5	8	7	6	3	4
Control Pin:	14	8	10	10	10	8
Top Pins:	4	7	6	7	10	11
Totals:	**23-23-23-23-23-23**					

If there is a master key involved, it would not change the basic precepts of this method. Let's assume the master key bitting is 3-2-3-4-1-2. That bitting would become your bottom pins and you would add master pins 2-6-4-2-2-2. The bottom pins and the master pins equal the change key bitting of 5-8-7-6-3-4.

So, the formula for figuring the pinning of an I/C Core in your head is:

Control Bitting + 10, minus the Change Bitting= the Control Pin Number. "13" minus the Control Key Bitting=the Top or Driver Pin Value

Although the foregoing may seem a little complicated, it's really very simple and just requires a little practice. So grab a piece of paper and a pencil and figure out a few theoretical pin stacks and see how easy it really is.

Randy Main
California

Post-It Note Pinning Aid for A-2 I-core

I was pinning up 75 BEST cores (KA) that required two #4 top pins in each core. As many of you know, the #4 wafer tends to jam slightly sideways, and you have to struggle with it to get it to slip in correctly.

To solve this, I keep a pad of Post-It notes nearby. Place the #4 top pin on a flat surface, then touch the sticky part of the Post-It to the top surface of the pin. This allows you to use the Post-it as a holder to place the pin right into the chamber without it tilting.

This will also work for the #3 A4 wafer and other thin master pins in other kits. Try it, it works every time!

Rick Duskiewicz
New York